OXFORD JUNIOR
ENCYCLOPAEDIA

VOLUME IX
RECREATIONS

OXFORD JUNIOR ENCYCLOPAEDIA

GENERAL EDITORS

LAURA E. SALT AND ROBERT SINCLAIR

ILLUSTRATIONS EDITOR: HELEN MARY PETTER

VOLUME IX

RECREATIONS

PREFACE

IN authorizing the preparation of this work the Delegates of the Oxford University Press had foremost in mind the need to provide a basic book of reference for school libraries. In form it was to be a genuine encyclopaedia, in treatment and vocabulary suitable for the young reader. To many children (and indeed to many adults) reading is not a natural activity: they do not turn to books for their own sake. But they can be trained to go to books for information which they want for some particular purpose—and thus very often, to form a habit which will be of lifelong value. Their capacity to read continuously for any length of time being limited, they can absorb knowledge better if they get it in small quantities: therefore they will often read reference books when they may reject the reading of more extended matter. Again, it is probably true to say of such readers that their approach is from the particular to the general, and from the application to the principle, rather than the reverse, that their main interest is in the modern world around them, and that since they are not very good at conceiving things outside their own experience, their capacity for grasping abstract ideas is limited. On the other hand, once their interest is aroused, they will often pursue a subject to remarkable lengths, so long as its development is logical and the treatment avoids dullness.

But such generalizations can easily be overdone: many children using the books will not be of this type. Moreover, it was evident from the first that a project involving so great an amount of work, however exactly it might meet its principal mark, would be fully justified only if it could be of service to a far wider circle of readers. Even for the age-group first in mind, anything like 'writing down to children' must plainly be taboo—but clear exposition and simple language are no bad qualities in writing for any audience. Here, then, it seemed was the opportunity to provide a work of reference suitable for many readers to whom the large, standard encyclopaedias are too heavy and technical, and the popular alternatives for the most part neither sufficiently complete nor authoritative. The fact that the plan allowed for an exceptionally large proportion of illustrations to text (between one-quarter and one-third of the total space) is an advantage to any reader, since pictures may, in many instances, save whole paragraphs of involved explanation. With these secondary aims well in mind, then, the General

'Editors have ventured to hope that the encyclopaedia may find usefulness not only among certain younger children, but also among older students in clubs, libraries, and Young People's Colleges, and even to no small extent among their parents and other adults who may wish for a simple approach to some unfamiliar or forgotten subject.

SCOPE AND EMPHASIS. Within certain limits the OXFORD JUNIOR ENCY-CLOPAEDIA purports to be reasonably comprehensive, though (in common with all general encyclopaedias) not exhaustive. Chief among these limits is that matter already easily available in school text-books is included only so far as its presence is necessary for the proper understanding of the subject under discussion. Thus, although an immense field of history is surveyed, it will be found mainly under headings dealing with its effects, or in the biographies of those who lived to make it. Purely technical or scientific subjects, also, are omitted except when they have some general interest. In natural history and kindred studies the immense variety of forms necessarily led at times either to their treatment by groups or to their omission on purely arbitrary decisions as to which species would, in all probability, never be looked for, or because there was nothing particularly interesting to say of them. In point of general balance the stress is laid rather on the modern world, though due space is given to the factors which have shaped it, no less than to those which are changing it.

ARRANGEMENT. The encyclopaedia is planned to consist of twelve volumes. Each is arranged alphabetically within itself, and each deals with a particular range of related subjects. Within its terms of reference, then, each volume is virtually self-contained, and, owing to the great number of single-line cross-references, can well be used alone. This arrangement, which has several incidental advantages (as of production, in difficult times, and of prompt revision later), arose mainly from one consideration. If articles were to be kept really short—and, in fact, few approach and almost none exceeds 2,000 words—many subjects could be dealt with comprehensively only by referring the reader to other relevant articles—itself a desirable thing to do. It was clearly preferable for these to be under his hand, rather than be dispersed through any of the twelve volumes at the caprice of the alphabet. This the present arrangement achieves to a great extent. If it has led to a small amount of overlapping, that again is not without its advantages.

Cross-references, then, play an indispensable part in the make-up of the encyclopaedia. They are of two kinds: references in the text to further articles amplifying the particular point under review, and references at the end of an article to others taking the whole subject farther. Therefore, a reader looking up any wide subject, such as ATHLETICS, and following up its cross-references either in the text or at the end of the article, can discover under what main headwords the subject is treated. These, again, will refer him to any subsidiary articles, as also, in many cases, to those of a comple- mentary nature. Thus he may be guided either from the general to the particular or vice versa. It is believed that the titles of the twelve volumes (see p. xii), in conjunction with their sub-titles, will usually lead the reader straight to the volume containing the information he wants. In selecting headwords, the rules generally followed have been to prefer the familiar, or even the colloquial, reserving the technical alternative for a single-line entry, and to group narrow subjects under a headword of wider scope. Thus, for CAMPANOLOGY, *see* BELL-RINGING; for PALMISTRY or PLANCHETTE, *see* FORTUNE- TELLING; for ACROSTICS, *see* PUZZLES; and for KNUCKLEBONES, *see* STREET GAMES.

L. E. S., R. S.

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PLAN OF VOLUMES

HOW TO USE THIS BOOK

THIS VOLUME is one of twelve, each on a separate subject, the whole set forming what is called an encyclopaedia, or work from which you can find out almost anything you want to know. (The word comes originally from the Greek *enkuklios*, circular or complete, and *paideia*, education.) Each of the twelve volumes is arranged alphabetically within itself, as twelve dictionaries would be.

The difference between a dictionary and an encyclopaedia is that, while the first gives you no more than the meanings and derivations of words, the second tells you a very great deal more about their subjects. For instance, from a dictionary you could learn that ARCHERY means shooting with a bow and arrow—and little more; but an encyclopaedia will tell you how a good bow is made, what rules govern target-shooting to-day, as well as the early history of the sport—and many other things about it. Then a dictionary contains nearly every word in the language; but an encyclopaedia deals only with words and subjects about which there is something interesting to be said, beyond their bare meanings. So you should not expect to find every word in an encyclopaedia—every subject is there, but not every word.

To find any subject, you have first to decide in which of the twelve volumes it comes. Each of these has a title as well as a number, and also a list of general subjects to make the title clearer. All these are set out in the Plan of Volumes on the opposite page. Very often you will be able to tell from the title alone which volume contains the information you need; but if not, the list of sub-headings on the plan opposite will help to direct you. For example, if you want to read about people, the way they have lived at different times and places, and the things they have believed and worshipped, you would turn to Volume I. If, however, you want to find out about an animal or plant, you would look it up in Volume II, Natural History; but if you wanted to know how that animal or plant is used in something like farming, fishing, or trapping, you would find it in Volume VI. If your subject were something in nature that does not have life—such as the sun, or a particular country or river, or a kind of stone—you would find it in Volume III, with tides, earthquakes, the weather, and many other things. Matters connected with communication of any kind—of people, or goods, or even of ideas—are in Volume IV. So you would look there for languages, and

printing, and broadcasting, as well as for ships, and trains, and roads. But if it is the engineering side of any of these things that interests you, Volume VIII, Engineering, is the place to try. Business and trade are in Volume VII; and how we are governed and protected by the State, the law, and the armed forces is in Volume X. Volume XI deals with almost everything connected with our homes, from the building and furnishing of the house to the clothes and health of those who live in it. The titles of Volumes V and XII, Great Lives and The Arts, explain themselves; and a rather fuller account of the volume you are reading now is given on page xv.

To find your subject in the volume, think of its ordinary name, and then look it up just as though you were using a dictionary—the As on the first page and the Zs (if there are any) on the last. If you cannot find it, try a more general word. For instance, if you want to read about Budgerigars, and cannot find them under their name (as you cannot), try either CAGE BIRDS or PETS—either of which will lead you to them. As you read any article, you will probably come across the titles of other articles in some way connected with what you are reading. You will know that they are titles of other articles because they will be printed in capital letters. Either they will be followed by (q.v.) in brackets (this is short for the Latin *quod vide*, and means 'which see'), or else they themselves will be in brackets, with the word *see* in front of them. You can look up these other articles at once if you want to know more about the particular point dealt with, or you can save them up until you have finished the article you are reading. At the end of any article you may find the words 'See also', followed by one or more titles in small capital letters. If you look these titles up, they will tell you still more about the subject that interests you. These last 'cross-references' are very useful if you want to look up a particularly wide subject (such as GAMES or DANCING), because they show you at once the titles of all the main articles dealing with it. You can then decide for yourself which to read.

WHAT YOU WILL FIND IN THIS VOLUME

THIS VOLUME IS ABOUT RECREATIONS, PAST AND PRESENT; THE MANY WAYS IN WHICH PEOPLE SPEND THEIR LEISURE TIME TO RE-CREATE AND REFRESH THEIR MINDS AND BODIES

GAMES AND SPORTS. People have always played games. All children and almost all grown-ups play sometimes, even if only by trying out a cross-word puzzle, or throwing a ball for a dog to chase. Next after food to live by, man has insisted on recreation. The Viking warriors, when they invaded England with their battle-axes, brought also gambling DICE made from the teeth of dead horses.

You will read here of games which two people can play quietly, needing only a few bits of wood or pasteboard, such as DOMINOES, CHESS, or CARD GAMES; in fact some games, such as PATIENCE, can be played by one person. You will also read of organized sports which bring together hundreds or thousands of people--FOOTBALL, CRICKET, and BOXING, as well as HORSE RACING, MOTOR RACING, and GREYHOUND RACING. The physical recreations, depending on a finely trained human body and judgement, include the various forms of ATHLETICS, SWIMMING, ROWING, and MOUNTAINEERING. Some recreations are relics of a past way of life, such as FALCONRY and ARCHERY; others, such as CHARIOT RACING, exist no more. Some are the recreations of a particular people, such as PELOTA of the Basques or the HIGHLAND GAMES of the Scots. Others, such as HUNTING and SHOOTING, have lost influence during changes in country life in the past century. Since this volume seeks to make a true record of recreations, it must include some which have been open to moral criticism. BEAR BAITING by savage dogs was the brutal sport of a cruel age. In our time many people enjoy BETTING and other forms of GAMBLING, often of a very simple kind; yet many are aware of the dangers which underlie regular gambling.

All the activities which have been mentioned so far involve either skill or chance, or, more generally, a mixture of both. Each game or sport is more or less competitive, designed to lead up to a result which remains unknown till the end—hence the excitement.

THEATRE, DANCE, AND CONCERT. The second main branch of activities in which people engage out of choice has nothing to do with the excitements of chance or competition. It depends on the pleasure which is

four'd in a pattern of ideas, and in the perfection of expression. In going to a THEATRE, a CINEMA, or a CONCERT, or in listening to BROADCASTING PROGRAMMES, we see how the artist's ideas are expressed by musicians or actors. In this book you will find many such articles as ACTING, STAGE DESIGN, MUSICAL INSTRUMENTS, PUPPETS, and CIRCUSES, and others on the making of both professional and amateur FILMS. Allied with these is another great form of recreation; this involves rhythmic movement, as in BALLET, MIME, BALLROOM DANCING, FOLK DANCING.

ANIMAL COMPANIONS. Since they were first domesticated, certain animals have been closely associated with man's recreations. HORSES and DOGS, in particular, have taken part, not only in hunting and racing, but also in walking and riding. CATS and other animals, such as CAGE BIRDS, have been kept as PETS; PERFORMING ANIMALS have formed a popular part of entertainment; and there are few people who have not visited a ZOOLOGICAL GARDEN.

CLUBS AND SOCIETIES. The association into groups for companionship and pleasure is a natural human instinct. Here are accounts of old established social CLUBS, as well as of CLUBS FOR BOYS AND GIRLS all over the country, and of the many societies such as the Y.M.C.A., Y.W.C.A., TOC H, and WOMEN'S INSTITUTES.

*The words in capitals are the titles of articles*

A

ACROBATS. The word 'acrobat' comes from the Greek *akros* (highest) and *baino* (go) and it literally means 'one who walks on tiptoe'. It was originally applied only to rope-dancers, but it is now used of all performers of difficult gymnastic feats—balancers, such as rope and stilt walkers, tumblers, who perform variations of such feats as somersaults and cartwheels, and contortionists who are able, through natural suppleness and practice, to twist their limbs and bodies into unnatural positions. Acrobats train from early childhood so that they can perform the most complicated variations of these three types of trick. Contortionists often have some natural advantage to begin with, such as double-jointedness.

Acrobatic performances have been popular since the very earliest times. In Ancient Greece there was a school for rope-walkers, and the Greek poet Homer refers to tumblers who danced on their hands and heads. Pictures of acrobats are to be found in the mosaics at Pompeii, and on the frescoes in Egypt, where some still familiar tumbling tricks are depicted. In the East tumbling and contortionist performances have always been popular, and many modern circus performers come from China and Japan.

In the Middle Ages, among the strolling entertainers of gleemen (*see* Street Entertainers), tumbling was so popular that it seems almost to have taken the place of ordinary dancing—in fact, the two terms are used synonymously by mediæval writers. As dancing it was more grotesque than beautiful, for the performer was generally upside-down, with the head or hands on the ground, or sometimes with the hands on the points of knives. The tumblers also performed hopping dances on one leg. Amongst

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their other accomplishments were stilt-walking, dancing on the tight-rope, vaulting through hoops, and complicated balancing acts on sword blades and poles. Many contortionists, known as 'posture-masters', performed such tricks as clasping the legs round the neck and walking on the hands, or hanging from a pole with the head threaded through the legs. Even when these strolling entertainers ceased to exist in great numbers, acrobats remained popular, travelling round to perform at Fairs (q.v.) and later also in theatres. Sadler's Wells was a centre for acrobatic performances in the 18th century, and in the 19th and 20th centuries they have become popular in Music Halls and Pantomimes (qq.v.), where they generally take the form of comic tumbling or serious acrobatic dancing in which one partner lifts, throws, and catches the other. The main home of acrobatics is, of course, the circus.

Acrobatic tricks have their own special names, many of which have grown up in the circus. The rope-walker is properly called a 'funambulist' (from the Latin—*funis* rope, *ambulare* to walk). He performs either on the tight-rope, on which he can dance, somersault, or even ride a bicycle, or the 'slack-wire', which swings from
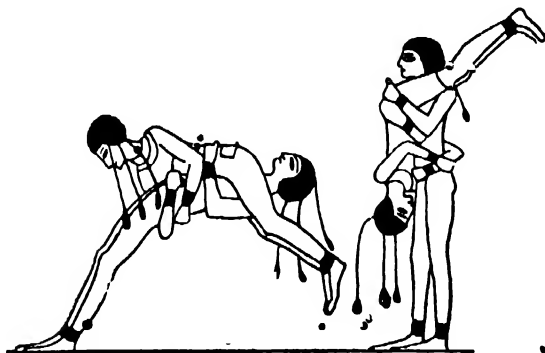
EGYPTIAN TUMBLERS FROM A TOMB WALL-PAINTING

side to side whilst he walks across it, balancing on one foot at a time and holding some object, such as an open sunshade, to steady him. An 'aerialist' is an acrobat who performs on the tight-rope or trapeze, up in the dome of the circus tent—sometimes as much as 70 feet above the ground. In the modern circus precautionary measures against accidents are legally necessary, and tight-rope performers have a safety-net, like an enormous hammock, stretched under their rope. 'Ground and lofty tumbling' is used to describe all kinds of somersault—the *saut de lion* (head first, to land on the nape of the neck), the 'flip-flap' or 'fly-flap', as it was once called (a backward somersault), and complicated variations, where the acrobat performs somersaults through the air after a springboard leap, or runs down a long inclined platform and somersaults over rows of horses or elephants. 'Humpsti-bumpsti' is a tumbling act performed over chairs and tables. Tumblers who juggle with their feet are known as 'Antipodean jugglers'. In the act called *Jeux Icariens*, popular with Japanese acrobats, a small boy, either lying rigid or curled up in a ball, is tossed backwards and forwards on the feet of two acrobats lying on the floor. Tumbling and balancing are combined in the trick called 'Pyramids', in which men balance on one another's shoulders, or in 'Polandrics' (invented by an 18th-century performer named Little Polander), a trick in which the acrobat stands on his head on a chair at the top of a ladder.

Various kinds of apparatus are now used by acrobats, the most famous being the trapeze,

used first in the 1860's by a young Frenchman named Leotard. His was a solo act, in which he swung from one trapeze to another; but to-day there are at least two in a trapeze act—one catcher and one or more leapers. The catcher hangs head downwards from one trapeze and holds out his hands towards the leaper, who releases his hold on his own trapeze and is thrown towards the catcher. Horizontal bars are used in the Bar Act, in which several acrobats perform, leaping and swinging from the hands of their partners. They increase their natural resilience by bouncing on a spring mattress called a 'trampoline' (originally the name for a springboard). In another act a long flexible pole called a 'perch' is used: it is supported in the belt of a strong man, his partner then performing tumbling and balancing feats at the top. Many acrobats perform on trick bicycles which can be taken to pieces as they are ridden, the rider often finishing up on a very high saddle on a single wheel, with one or more members of the team balancing on his head and shoulders. The most famous trick cycling troupe were the Wallendas, who performed on a high-wire 70 feet above the ground. Between their bicycles two of them carried a pole, on which another of the troupe balanced, while a girl climbed on his shoulders.

Amazing acrobatic feats have been performed at various times, especially by rope-walkers. On one or two occasions in the 16th and 17th centuries foreign rope-dancers gave open-air demonstrations in London. One of these, a Spaniard in the reign of Edward VI, slid down a rope

ACROBATS
A woodcut of a slack-wire performer, a tumbler, and a contortionist, from a late 18th-century broadsheet
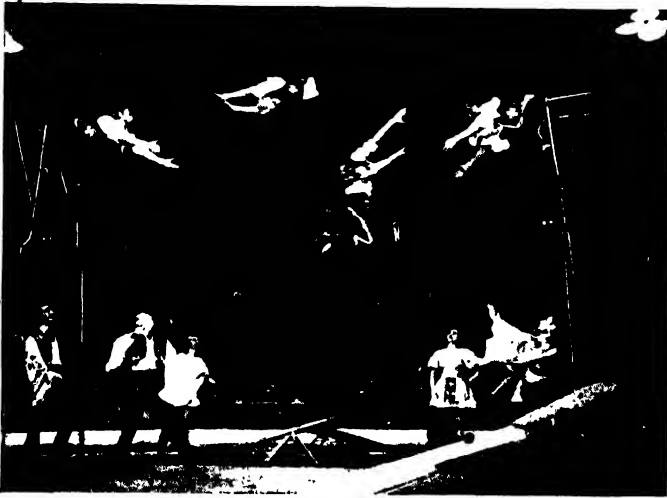
AN ACT BY SPRING-BOARD ACROBATS AT BERTRAM MILLS'S CIRCUS
Sport and General

stretched from St. Paul's steeple to just in front of the Dean of St. Paul's house. The most famous of all rope-walkers was the Frenchman Blondin who, in 1859 and 1860, crossed Niagara Falls four times on a tight-rope—once blindfolded, once carrying a man on his back, and once pushing a wheel-barrow with a man in it. The fourth time he carried a stove with him to the middle of the rope, and there cooked an omelette and ate it, before completing his journey.

See also CIRCUSES; CLOWNS; JUGGLERS; STREET ENTER-TAINERS

ACROSTICS, *see* PUZZLES.

ACTING. The art of acting, as we generally understand it, consists of the skilful performance of a play given to entertain an audience. It is possible to act without a play, as in CHARADES (q.v.), and it is possible to act without an audience, as many small children do; but neither of these forms of acting can be called art. So in considering the work of an actor, we will assume that he is to perform to an audience. An actor has to portray a character other than his own, and also convey the various emotions which that character would experience in the different situations or adventures of the play. His part has already been clearly outlined by the author, and the actor must always be true to the author's intention. The character is not fulfilled, how-ever, until the actor has added his own inter-pretation, and given it life in actual performance.

He needs creative imagination to de-velop the part in this way. No two actors will give identical characteri-zations of the same part, because personality, physique, and indi-vidual points of view colour every player's work.

The finished performance is arrived at by the co-operation of actor and author with yet a third agent—the producer, who controls and balances the work of the members of his cast, directs all the technical details during rehearsals, and guides and criticizes the players. It is often im-possible for an actor to know the effect of his own work from the point of view of the onlooker. For instance, he may believe he is emphasizing a point by speaking loudly and rapidly, when the effect can be much better gained by using a low, measured tone. Only the producer, sitting in the auditorium and watching the play grow together into a concerted work of art, can judge the effects. The actor, therefore, has to fit his ideas into the general pattern of the play.

Dramatic imagination is, so to speak, the fuel that drives the engine—but it is not the engine itself. An actor's basic tools are his body and his voice. These have to be made flexible and ex-pressive to the highest possible degree. He acts with his whole physique—voice, facial expres-sion, the perfectly controlled and supple body, and by that curious magnetic quality, personality, which enables him to grip the minds of the audience and to hold them spellbound.

Though it is true that actors, like all other artists, are born with a gift that is not given to all, years of endeavour and perseverance are needed before this gift can be perfected. The actors whose names have come down through his-tory were all eager to stand up to the challenge of many different parts. Garrick, Kean, Irving, and Sarah Bernhardt are remembered to-day for the widely varying parts in which they ex-celled. This mastery was gained only through years of experience.

Forms and fashions change, but the essence of dramatic art has always been the same. Shake-speare has given us the whole heart of the matter in *Hamlet*, Act III, Scene II, in which Hamlet is telling the players that 'The purpose of play-ing . . . both at the first and now, was and is, to

A CLASS IN A DRAMATIC SCHOOL 9
Members of the Royal College of Dramatic Art practising mime to music. *John Vickers*

hold, as 'twere, the mirror up to nature'. This does not mean, however, that the actor must simply be natural, behaving exactly as if he were not on the stage at all. A play is a work of art designed to give the *appearance* of life: it is not life itself. It is acted under conditions unlike those of everyday life, and events and emotions follow one another far more rapidly than in reality. The play is devised to create tension and unflagging interest from the rise of the curtain to its fall.

What the actor must do in effect is to keep exact control over his actions and the words that give rise to them, performing them so that they are convincing, both to himself and to the audience in every part of the theatre. He is very seldom required to perform actions in themselves unfamiliar, or to use vocal power beyond the scope of a good resonant voice. His skill lies in using his mind and body together to express the ideas of the play, and in concentrating upon his part so that he lives inside it all the time he is on the stage.

In acting there are four bricks upon which everything is built—speech and silence, movement and stillness—each as positive as the other. A character is just as much alive when he is silent as when he is expressing himself by means of the author's dialogue. When he is speaking, the thoughts are supplied by the author, but when he is silent, the actor must imagine them for himself. The character may be listening, or planning, or perhaps controlling some emotion, and the actor has to express this by means of silence. In the same way stillness is not just a cessation of movement. It must convey something significant about the character—that he is reposeful by nature, or that he is suddenly frozen into stillness through some emotion. Silence and stillness present difficulties undreamt of by the average playgoer. In using them the actor is supported only by his own dramatic sense and sympathy with his part.

Until the end of the 19th century professional acting was taught almost entirely within the theatre itself. But about that date the theatre

became immensely popular, and the social status of the actor changed. Prejudice against the idea of the stage as a career relaxed, and the numbers of young would-be actors far exceeded the absorbing power of the theatres. This keen competition led to the opening of dramatic schools where preliminary training could be given, and it is now very difficult for a young actor to gain a footing in any professional company without first going through a course of training. This normally occupies 2 years, and covers all the technical crafts that go to make up an actor's equipment. Movement is taught by dancing, mime, fencing, and physical exercises; voice by diction classes and the declamation of verse; and dramatic development by the rehearsal and performance of widely varying types of play. A student who completes such a course with credit should be ready to hold his own in a small part in a professional company. His training will have given him a broader education than the old-time actor had, but it can never replace the essential life of the theatre or the understanding of how to reach and hold an audience. This can only be learned by actual experience in a professional production.

For the many who delight in amateur acting, it is possible both to obtain, and to give, very real enjoyment, if the basic principles are understood. These, of course, are the same for amateur as for professional. There must first of all be a vivid and precise understanding of the part. The voice must be flexible and capable of clear, sustained speech. A straight back and the ability to move with good balance and precision, and to control all fussy, fidgety movement that has no dramatic value, are also necessary. The better the play, the more likely it is that a fairly simple production by inexperienced players will be successful, for where the author has done much for the actors, their responsibility is not so heavy. In fact the best result is often obtained by following a policy taught to over-eager young professional actors —'Don't get in the way of the lines.'

See also PLAY PRODUCTION.

ACTING, HISTORY OF. 1. CLASSICAL. The earliest acting among primitive peoples was part of their religious ritual, and very difficult to distinguish from the earliest dancing (see DANCING, HISTORY OF). It was certainly not thought of as a form of entertainment. The first people

to separate acting from religion and develop it as an art were the Greeks. During the 5th and 4th centuries B.C. some of the most magnificent plays in the world's history were regularly performed by highly trained professional actors (see GREEK DRAMA, Vol. XII). These plays were acted in large, open-air amphitheatres (see THEATRE, HISTORY OF); and therefore, to suit these conditions, their presentation tended in every way to be overemphasized. Anything like naturalistic acting would have been quite ineffective. To make the play intelligible at a distance, the actors had to cultivate voices of great power and resonance. They wore masks over the upper part of the face, painted symbolically to suggest the character impersonated; sometimes the mask concealed a megaphone to give carrying power to the voice. In tragedies, in which the aim was to excite terror and pity to the highest degree possible, the actors were made to appear especially impressive by tall masks and thick-soled boots. Sometimes they even walked on stilts, and with their long robes must certainly have looked more than human. All movement was stylized and strictly controlled within the pattern of the play. The acting must have required strenuous years of training, to which the emphasis on athletics in Greek education would have contributed. Actors, among whom there were no women, were paid by the State.

In the Roman times the standard of acting deteriorated, the ordinary public being content with buffoonery and the bloodthirsty spectacle of the GLADIATORIAL GAMES (q.v.). Nearly all actors were deprived by Roman Law of their civil rights, and were despised as a class. A few of them, however, were under the patronage of leading citizens such as Maecenas, and were able to instruct pupils.

2. MEDIEVAL. From the collapse of the Roman Empire until the 10th century, acting hardly existed as an art in western Europe; only the wandering minstrels survived to give entertainment in castles and at fairs. In England, the first real actors were amateurs—the clergy and their parishioners who performed MIRACLE and MORALITY PLAYS (q.v. Vol. XII), which were religious in character, but gave the actors scope for fooling and mimicry. When town guilds were formed, the guildsmen competed with each other in acting plays of the same kind. Acting was also practised in the Inns of Court and at the universities. Professional acting developed when

companies of strolling players went from town to town giving shows in inn-yards and market-place booths. As well as acting morality plays and INTERLUDES (q.v. Vol. XII), the players gave individual performances, singing, fooling, and trials of strength: they were, in fact, not very different from the later MUSIC HALL (q.v.) artists.

3. ELIZABETHAN. In the Elizabethan age, the first proper theatres were opened, and regular companies of professional actors were formed. The supervision of actors became the direct concern of the monarch and the court. By an Act of 1572, all actors had to have a licence to act given either by the Queen herself, or by a leading noble or High Court official: otherwise they were classed as vagabonds and liable to punishment. Both the Queen herself, and the nobles, however, were liberal in giving licences, and at the time of SHAKESPEARE (q.v. Vol. V) there were at least six companies of adult actors. Shakespeare himself joined the Earl of Leicester's company, which under James I became known as the 'King's Men'. There were also companies

RICHARD TARLTON
One of the most famous comedians of Shakespeare's day. He was particularly noted for his skill in improvising

of boy actors formed from the choristers of schools such as Westminster and St. Paul's, and there was close rivalry between them and the men's companies. All the women's parts were played by boys. Two of the most famous boy actors were Jack Wilson, who was a member of Shakespeare's company, and Salomon Pavey, about whom Ben Jonson wrote a poem. It was very difficult for most actors to earn a living on the stage, even in a London company, and many of them fell into debt. As a class they were despised, and only a few famous ones, such as Alleyn, Burbage, and Shakespeare himself, who held shares in his company's theatre, were able to attain some social standing in the community.

When Shakespeare arrived in London in 1586, the acting was very crude and conventional. He himself was not a great actor, like Alleyn or Burbage, but he had profound knowledge of the technique of acting and of the actor's problems. He disliked the vulgar and inartistic methods of the popular players of the day, who strolled about the stage, bellowing their lines and playing to the audience. In *Hamlet*, Act III, he criticizes these methods. Hamlet tells the players not to 'mouth' their words, not to 'saw the air' with their arms, not to 'tear a passion to tatters'; they must 'suit the action to the word, the word to the action'. During performances the audience jostled round the stage, shouting their approval or disapproval of the actors. They insisted that serious plays should have passages of broad comedy; and there was a good deal of improvisation by the clowns and comic characters, and of what we should call 'gagging'. This was a great feature of the contemporary Commedia dell' Arte (*see* HARLEQUINADE AND PANTOMIME) on the Continent. There was virtually no scenery except for a few pieces of minor furniture, and the actors dressed in the costumes of their day, varying it according to the characters they were playing.

4. RESTORATION. In the first half of the 17th century the influence of the Puritans discouraged the popular theatre, though MASQUES (q.v.) were a favourite form of entertainment among the aristocracy. It was not until the restoration of the monarchy in 1660 that theatre-going again became a popular habit, but the chief patronage continued to come from the Court. The most popular plays were comedies satirizing the manners of the day, with brilliant dialogue which demanded a swift and skilful technique from the

DAVID GARRICK IN *Lethe*

From a painting by John Zoffany (1725–1810). This play performed at Drury Lane in 1740 was written by Garrick himself, who is seen on the left. *Birmingham Art Gallery*

actors. In 1660 Thomas Killigrew and Sir William Davenant were granted authority to form two companies of actors. In Davenant's patent women for the first time were allowed to appear on the stage, the first part so played being Desdemona in 1660. NELL GWYN (q.v. Vol. V), who became Charles II's mistress, belonged to this period and was the first famous actress of the English stage.

5. 18TH CENTURY. By the beginning of the century the most popular type of play was the sentimental comedy, full of moralization. The acting was pompous and artificial, and it had become conventional to speak the words in a solemn chant. This was largely due to the influence of contemporary French actors, who declaimed the lines of RACINE and MOLIÈRE (q.v. Vol. V) with much solemnity and formal gesture.

Under the influence of GARRICK (q.v. Vol. V), Barry, Peg Woffington, and others, acting became much more naturalistic, though still greatly exaggerated by modern standards. Plays, however, were inclined to depend too much on the performance of the stars, and were frequently spoiled by the incompetence of the rest of the company. Actors still generally wore the dress of their own time: Garrick acted Macbeth in the uniform of an 18th-century officer, and Cato and Caesar were made to appear in full wigs. Macklin was the first to make a serious innovation when, in presenting *Macbeth* in 1773, he dressed his whole company in Scots dress. Garrick himself was one of the greatest actors known, excelling in characterization and range of feeling. His position as the greatest actor of the day was afterwards held by Edmund Kean

The Skin of our Teeth BY THORNTON WILDER AT THE PHOENIX THEATRE, LONDON, 1945
Act 2. The Fortune Teller is mocked by players who appear on all sides, from the back of the stage and from the auditorium.   *John Vickers*

(1787–1833), a highly individualistic actor whose performances of Richard III, Shylock, and others gained him a tremendous reputation in his own day.

Actors and actresses were often as roughly treated by the audience as they had been on the Elizabethan stage. Even Garrick and Peg Woffington were sometimes rudely greeted, and an actor whose acting had offended the audience had to ask pardon on his knees before a full house before he could continue in his profession. Garrick himself moved in the highest intellectual and social circles of his day; but actors as a class were not generally accepted in society.

6. 19TH CENTURY. During this century acting became more and more naturalistic. In its early years the custom of acting period plays in the actual costumes of the period began. In later years the tendency for a star actor to dominate and so spoil the balance of a play was cor-

rected, particularly by HENRY IRVING (q.v. Vol. V) during his long tenure of the Lyceum theatre. Irving emphasized the importance of the team work of the company, which had been practised in the companies of Shakespeare's time, but had been disregarded in the 18th century. His later rival, first at the Haymarket and then at His Majesty's, was Beerbohm Tree, a less conventional actor noted for the elaborate splendour of his productions. Irving himself received honorary university degrees and was the first actor to be knighted; but socially actors were still not generally accepted. Most of them belonged to a few stage families such as the Kembles. It was not considered proper for a girl or boy of a good family to associate with actors or actresses, far less to go on the stage. Amateur theatricals, such as those satirized by JANE AUSTEN (q.v. Vol. V) in *Mansfield Park*, however, were one of society's amusements.

7. 20TH CENTURY. By the 1920's naturalistic acting reached a peak in the performances of Sir Gerald du Maurier. He practised a style of acting which was so naturalistic that he hardly appeared to be acting at all. He said that to act in this way you had to ignore the audience and regard the auditorium as though it were the fourth wall of a room. Such acting, however, far from being easy, requires a most exacting technique; though much slipshod, inferior acting was imposed upon the public by second-rate actors in the name of naturalism. At the present time most acting still continues to be naturalistic, and the developments in modern lighting have made possible an even more perfect technique. But experiment is in the air, in this country and elsewhere in Europe and America. Besides their experiments in new types of stage-set and theatre (see STAGE DESIGN and THEATRE, HISTORY OF), modern producers are also trying out new styles of acting. Some hark back to Greek methods, with a revival of the chorus: others are attempting to make use of the audience in helping to interpret the play. But it is too early yet to say that the age of naturalistic acting has given way to a new phase.

The long-standing prejudice against the acting profession has now disappeared, and schools of dramatic art are open to students from all classes of society who wish to go on the stage. To learn their technique actors have to study hard, and often spend years in a repertory company before getting an opportunity to play in a well-known London or provincial theatre. Amateur theatricals are a very popular form of recreation, dramatic societies being formed in towns and villages and by the members of firms and institutions. (See MUSIC AND DRAMA FESTIVALS; DRAMA LEAGUE.)

ACTING, PRODUCTION, see PLAY PRODUCTION.

AIRCRAFT MODEL, see MODEL AIRCRAFT.

AIRCRAFT RACING. To encourage the pioneers of flying, large sums of money have been offered by newspaper proprietors and others, as prizes for races and long-distance flights. Perhaps the most thrilling of these early contests was for a prize of £10,000 offered by Lord Northcliffe of the *Daily Mail* for the first pilot to fly from London to Manchester. On 27th April 1910, a Britisher, Grahame-White, and a Frenchman, Paulhan, started off. There was no question of completing the flight in a day, but the Frenchman, with the aid of the lamps of motorists and cyclists, made a landing after nightfall, and by starting again as soon as it was light the next day, reached Manchester before his rival, who had not dared to go on flying after dark.

The first organized racing in which competitors from different countries took part was an annual event, known as the Gordon Bennett race, for the International Aviation Cup given by Mr. Gordon Bennett, and first held at Rheims in France in 1909. Seven aeroplanes were entered, but only five finished the 20-kilometre course. Glen Curtiss, an American, beat Louis Blériot (the first man to fly across the English Channel) by the narrow margin of 6 seconds. His speed was 46·5 m.p.h. Next year the race was held in America, and this time Grahame-White won for Britain in his Blériot monoplane. His speed for the course was 61 m.p.h. In 1911 an American won at 78 m.p.h. The French were successful in the two following years, and raised the speed to 126 m.p.h. The outbreak of the First World War put a stop to these Gordon Bennett contests, but they were resumed in 1920. During the war the design of aeroplanes had greatly improved, and sturdier, more powerful machines were built. In 1920 France again won, and this being their third successive victory, they gained permanent possession of the cup. The speed of the winner, 186 miles in 1 hr. 6 mins., was higher than that of many racing aeroplanes built 10 or 15 years later.

In 1912 a Frenchman, Jacques Schneider, put up a trophy for international competition. The series of contests between seaplanes for this trophy did much to bring their design to a high pitch of refinement. The first Schneider contest was held in 1913, and was won by a Frenchman, Prévost, at the speed of 45·75 m.p.h. In 1914 the trophy was won for Great Britain by Howard Pixton, who flew a Sopwith seaplane at a speed of 86·8 m.p.h. After the First World War the contests were resumed, Italy for a time being successful. H. C. Baird brought the trophy back to Great Britain in 1922 by flying his Supermarine *Sea Lion* at an average speed of 145·7 m.p.h.

By now the biplane type of flying-boat was being outclassed by the twin-float monoplane. Governments began to get interested in these

events, which had previously been largely competitions between manufacturers. Machines were built under the supervision and at the expense of the various governments. The Americans won with their Curtiss seaplanes in 1923 and 1925, and in the following year Major de Bernardi, an Italian, won at a speed of 248 m.p.h. In 1927, in the contest held at Venice, Supermarines produced the *S.5* seaplane, with a Napier *Lion* engine, in which Flight-Lieutenant Webster of the R.A.F. put up an average speed of 281·7 m.p.h. Another Supermarine seaplane, the *S.6*, built for the 1929 race, was fitted with a Rolls-Royce racing engine of approximately 2,000 horse-power. Flying Officer Waghorn piloted this machine to victory at the then astounding speed of 328·6 m.p.h. In 1931 there were no foreign challengers for the Schneider Trophy, and had not a private benefactor, Lady Houston, put up £10,000 to cover the expense of building a new aeroplane, an improved version of the *S.6*, with an even more powerful Rolls-Royce engine, there would have been no contest. Flight-Lieutenant Boothman flew the *S.6b* over the Schneider course at an average speed of 340·1 m.p.h., winning the trophy outright for Great Britain. The performance of Glen Curtiss at 46·5 m.p.h. in 1909 compared to that of Boothman at 340·1 m.p.h. in 1931 shows how fast has been the development of aeronautics. And it must be remembered that speed records are not made in such races, but rather over straight courses for very short distances (*see* SPEED RECORDS, Vol. IV).

Another international competition, known as the 'Rundflug' and involving a flight round Europe, was started in 1928. In 1934 the most

A SEAPLANE TAKING PART IN THE SCHNEIDER TROPHY RACE, 1931. *The Aeroplane*

famous race in the history of flying, the Mac-Robertson Air Race from Mildenhall in Suffolk, to Melbourne, Australia, was held as part of the centenary celebrations of the State of Victoria. Large prizes were offered by Sir Macpherson Robertson, and the race aroused world-wide interest. It was a great test for both machines and pilots—indeed, only nine of the twenty starters completed the course. It was won by a British aircraft, the De Havilland Comet, specially built for the race and piloted by two Britishers, Scott and Black, in the remarkable time of 71 hours, at an average speed of 159 m.p.h. including stops. The Comet was a beautifully streamlined, twin-engined aircraft, the forerunner of the famous Mosquito of the Second World War. A fine performance was put up by two Dutch K.L.M. Airline pilots, Parmentier and Moll, in a standard Airline type of machine, the American Douglas '*D.C.2*' (later to be known as Dakota). They carried four passengers and a quantity of mail and gained second place in the race. Turner and Pangborn, in an American transport aircraft, a Boeing '*247-D*', were third.

In 1936 a similar race was flown from England to Johannesburg. The winner and only finisher was again Scott in a Percival Vega Gull, a standard type of single-engined, three-seater private aeroplane (a type used in the Second World War as a communication aircraft, and known as the Proctor).

The annual National Air Races in America provided the spectators with many thrills. Some of these contests were over considerable distances, and others round short courses which kept the aircraft always in view—the small, highly powered, and extremely manoeuvrable machines flashing round like racing-cars on a track.

With the growth of flying clubs most countries have organized races and competitions. In England the best-known of these events was the air race for a cup presented by King George V. The first race was held in 1922, and it was afterwards established as an annual event. In succeeding years several changes were made in the rules and regulations governing the King's Cup; but the original intention of keeping this race a 'circuit of Britain' was, with few exceptions, maintained. The rules were framed to discourage freak and special racing machines, and to ensure that entrants used standard private-owner or club types of aircraft.

From about 1930 until the outbreak of war in 1939, flying as a sport grew enormously in popularity. The flying clubs did a great deal to foster its growth, racing being an important event in many of the club meetings and displays. British flyers often competed at continental meetings. Through the clubs many keen fliers were able to take part in air races, a sport which had formerly been confined to men wealthy enough to own aeroplanes or to the professional pilots employed to represent them. The racing flyer must combine considerable skill as a pilot and navigator with a sound mechanical sense, which will enable him to get the maximum speed from his aircraft and engine.

See also AIR DISPLAYS.

See also Vol. IV: AERONAUTICS, HISTORY OF; SPEED RECORDS.

AIR DISPLAYS. The first air display, which took place in Paris on 21 November 1783, was a balloon display: the first man to be properly airborne left the ground in a hot-air balloon, carrying one passenger. The display was widely advertised and delighted the large crowd which had come to see it. There has always been something magical about flying, whether in balloons, airships, or aeroplanes; and from this small beginning in Paris to the elaborate shows organized to-day by the Society of British Aircraft Constructors, air displays have always attracted large and enthusiastic crowds.

Throughout the 19th century it was chiefly balloon-flying which attracted the crowds. Sometimes the airmen simply ascended in their balloons, waving flags and arms to the people below, and were quickly lost to view. Sometimes they sent down dogs and cats on parachutes in a cruel but effective way of attracting the attention of the spectators. The finest shows, however, were the firework displays from balloons, which carried up the fireworks and then released them from the dark skies. The Crystal Palace, erected at Sydenham in 1854, was a favourite place for such shows. The rarer but always popular parachute displays were held right through the last century. The first person to make a live drop from the air (from a balloon) was the Frenchman Garnerin, who came down over Paris as early as 1797. The sight of people falling from the air attached to white parachutes has always excited spectators.

The first aeronautical exhibition—it was not

ONE OF THE FIRST AIR DISPLAYS
The ascent of Montgolfier's balloon at Versailles in 1783

exactly a display—took place at the Crystal Palace in 1868, when a whole collection of models and designs were shown. The first full-scale air display, however, was not held until 1909 in Rheims in France. This famous meeting included many of the features of the modern air display, such as racing, dangerous flying, and display of models. After this meeting flying shows became an international institution, and, except for the period of the two World Wars, have been held ever since.

Perhaps the most popular events at the early meetings were the races between aeroplanes. When aeroplanes could only fly comparatively slowly, the whole race could take place immediately above an aerodrome, within sight of the crowd, the course being marked out for the pilots by large pylons erected on the ground. It was very exciting to see all the aeroplanes in the air together, hurtling round the course and turning round the pylons at the corners, especially as there was always a risk that they would collide in mid-air. As speeds increased, however, it became impossible to stage these

HENDON AIR DISPLAY, 1936
The Aeroplane

events over aerodromes, so that the spectators could see only the start or the finish of a race. Furthermore, aeroplanes were often handicapped according to their speeds, and some of the excitement of direct rivalry and competition was lost (*see* AIRCRAFT RACING).

In 1920 there took place the first of the great R.A.F. displays at Hendon, the last being held in 1937. These displays presented a wonderful spectacle of formation flying, crazy flying, bombing, parachute dropping, mock air fights, and many other attractions. One of the main features was the fly-past close to the ground of all the latest types of aircraft.

At present the best and almost the only show of its kind is that put on each year by the Society of British Aircraft Constructors. It has recently been opened to the public. On the ground are special stands and shows, where the makers of aircraft exhibit their instruments and every kind of flying equipment and accessories. At the end of each day of the exhibition, a flying show is held, when each maker displays his newest machines in the air. The pilot of each aircraft is given a fixed time to put the machine through its paces, during which time he does everything he can think of to display its characteristics. The pilots of fighters and lighter aeroplanes do daring aerobatics, and the pilots of the heavier transports and bombers also show their qualities by flying on one or two engines, by climbing, and diving. In recent years jet-propelled aircraft have been one of the great attractions in this class of flying; they hurtle at great speed a few feet above the aerodrome, and when level with the stands, shoot up into the sky with a great roar and are lost to sight in a few seconds. Finally the helicopters take the air, rising gently

off the ground as if they were pulled up by strings.

It is hoped that air displays will again become a regular feature of entertainment in this country. In particular the R.A.F., with its vast range of machines, can put on a display which no one else can rival and which would have the effect of interesting young people in the future of flying, as well as entertaining large crowds.

See also AIRCRAFT RACING.
See also Vol. IV: AERONAUTICS, HISTORY OF; AEROBATICS.

ALL-IN-WRESTLING, *see* WRESTLING.

AMERICAN FOOTBALL.

This game, which had its origins in the English games of soccer and rugby (chiefly the latter), is governed by hundreds of rules, each of which has hundreds of interpretations. These rules are made by a committee of the National Collegiate Athletic Association, and have been changed again and again. The first game of inter-collegiate football in the United States was played on 13 November 1869, between the Princeton and Rutgers Universities. Other colleges and universities soon joined these two. Professional football, which began in 1895, but did not gain prominence until about 1920, is played under slightly different rules from the collegiate game. At present there are two major professional football leagues. The 3 months from September to November is the period in America when football most holds the public interest.

The game is played with a ball like a rugby football, on a rectangular field 360 feet in length and 160 feet wide. At each

AN AMERICAN FOOTBALL FIELD
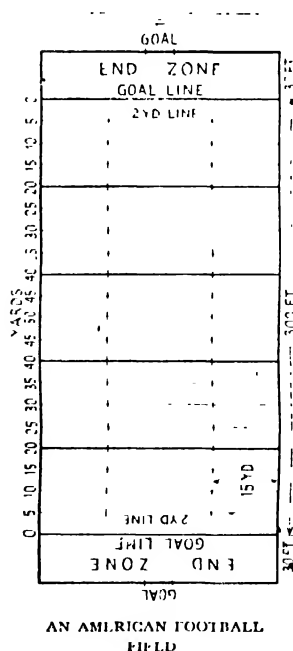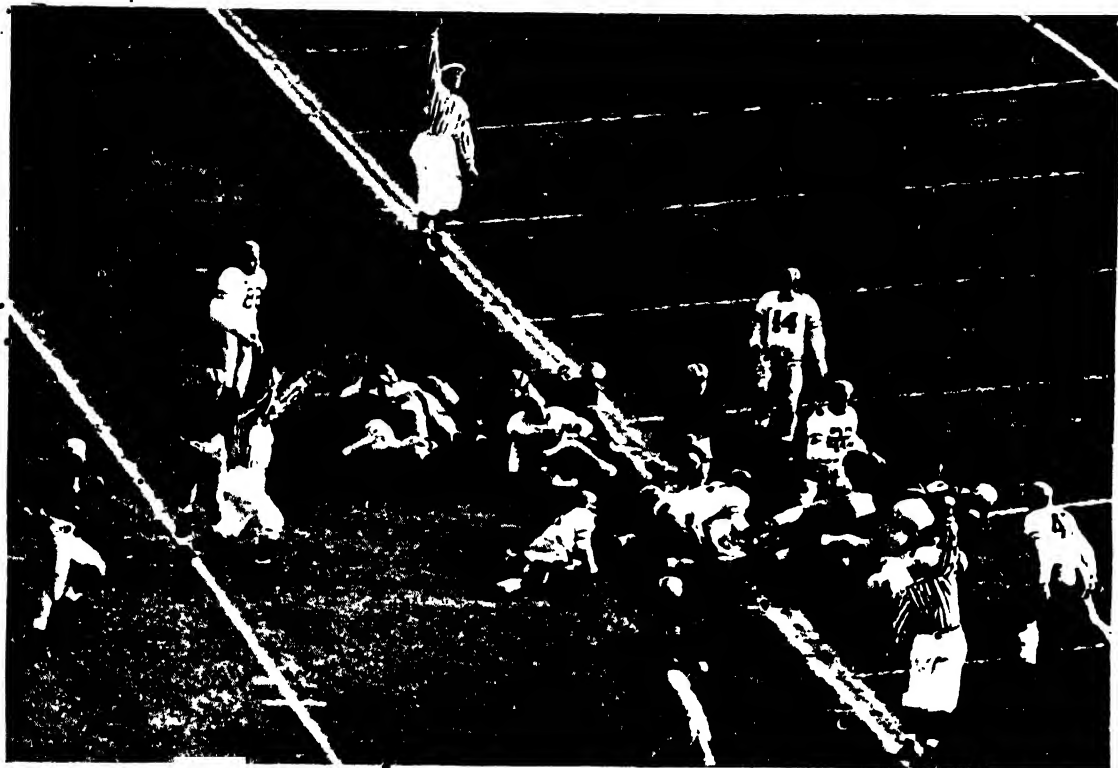
AN AMERICAN FOOTBALL MATCH

The player in the dark jersey on the extreme right has just carried the ball over the opposing goal-line and a touchdown
is taking place. *New York Times*

end of the field, 30 feet from the back of 'end line',
runs the 'goal-line', and the space between these
lines is the 'end zone', the part of the field where
the scoring takes place. The goalposts, 18 ft. 6 in.
apart, with a crossbar 10 feet high, are in the
middle of the end line. The area between the
two goal-lines is called the 'field of play', and
is marked at intervals of 5 yards with lines
(stripes) parallel to the goal-lines (see diagram).

A team consists of eleven players, and although
any number of substitutions may be made, not
more than eleven players may be on the field
at one time. The team has seven forwards or
'linemen' and four backs. The forwards are left
and right ends (or wings), left and right tackles,
left and right guards, and a centre. The backs
are a quarter-back, left and right half-backs, and
a full-back. The game is so complicated and
involved that four officials are needed to manage
it—a referee, an umpire, a head linesman, and
a field judge. The players wear a considerable
amount of protective clothing—a leather head-
guard, shoulder harness of leather and felt worn
under a jersey, and thigh and knee pads.

The game is scored, like rugby football, by a
system of points, and is decided by the final
score at the end of four periods of 15 minutes
each. At the 30-minute point there is a 15-
minute rest, and then the teams change ends.
Points are scored by a 'touchdown' which counts
six points; by a 'try after touchdown', one point;
by a 'goal from the field', three points; and by a
'safety', two points. A touchdown (which is
much like a 'try' in rugby football) is made
when an attacking player is able to carry the
ball over the opponent's goal-line. The ball is
then said to be 'dead'. The attacking side has
the right to 'try for extra point', generally by
taking a kick for goal from a 'scrimmage' 2 yards
in front of the goal-line. A safety occurs when
a player in possession of the ball is 'downed' be-
hind his own goal-line.

To start the game, the ball is kicked off from
the kicking team's 40-yard line. The object,

, then, is to advance the ball towards the opponent's goal by running with it or by passing it to a team-mate, until it can be carried across the goal-line. When the ball goes out of play at any point along the sidelines, which it does frequently, it is put in play by a 'scrimmage'. For a scrimmage, the forwards or linemen line up on the appropriate 5-yard line, and the centre, bending over the ball, passes it between his legs to one of his backs, who starts the run. After the ball is put in play, a team is allowed four plays or 'downs' to gain 10 yards, each down (that is, the man with the ball is stopped by a member of the opposing team) being followed by a scrimmage. A team continues to get four more chances as long as they continue to gain 10 yards in four attempts at passing or running the ball. When they fail to make the necessary 10 yards in four downs, the ball is surrendered to the opposing team to scrimmage.

See also RUGBY FOOTBALL.

AMERICA'S CUP, THE. The *America* was a racing yacht built in the United States in 1851, with the object of challenging British yachts in their own waters. After seeing her speed, few were ready to accept her challenge; but eventually she was invited by the Royal Yacht Squadron to compete in a race round the Isle of Wight, for which the trophy was a large silver ewer, valued at a hundred guineas. The *America* won this race with such ease that the signalman who was giving the results of the race to Queen Victoria is reported to have said, 'America first, your Majesty; there is no second' —a remark which has become a watchword in the United States.

The trophy which she won in this race, and which subsequently became known as 'The America's Cup', was presented by her owners to the New York Yacht Club to serve as a perpetual challenge cup for which any yacht club in the world should be eligible to compete upon giving notice of a formal challenge. The challenge has to be made at least 10 months in advance, and must state particulars of the type of vessel with which it is proposed to compete. This may be of any rig; its length on the waterline must be between 65 and 90 feet if it has one mast, and between 80 and 115 feet if it has two. It must

THE 'AMERICA' AT COWES, 1851
From a drawing by Oswald W. Brierly. *Parker Gallery*

go under its own sail to the place of contest. The conditions and the courses for the Challenge races were frequently a cause of bitter controversy in the early years of the Cup, and have been changed several times. Latterly, the series consisted of a set of seven races sailed off New York on alternate days over a triangular course, each leg of which is 10 miles in length.

The object of the donors was to encourage international competition among yachtsmen and to stimulate the design and development of racing yachts. The first object has so far succeeded that the America's Cup is now universally regarded as the world's premier yachting trophy. It can hardly be maintained, however, that healthy design has been encouraged; for although many millions of pounds have been expended in building challengers and defenders, the result was the development of a class of yachts which were so little capable of sea-keeping that they were liable to lose their masts overboard in anything more than a fresh breeze, and which were of such little use for any other purpose that they were usually broken up after a few years. The early America's Cup racers survived much better than the modern boats, and the *America* herself had a long and distinguished career. She is still preserved as a museum piece at the American Academy at Annapolis.

Although British yachts have challenged fourteen times and Canadian twice, no one has ever succeeded in winning the cup from America. Few have even looked like doing so. The most notable attempts in recent years have been those of Sir Thomas Lipton between 1899 and 1929 in his five successive yachts, all called *Shamrock*, and of Mr. T. O. M. Sopwith in his *Endeavour I* and *II*, who came near to winning in 1934 and tried again in 1937. Since then no race has been held; and as it involves the construction of yachts so expensive and so unseaworthy it is perhaps unlikely to be revived in its present form.

AMUSEMENT PARKS, *see* Fairs.

ANGLING, FRESHWATER. Fishing for food, like hunting for food, has always been an occupation of man. The first rods we know anything about were depicted by the Egyptians about 2000 B.C. About A.D. 130 a Greek naturalist called Aelian described the first artificial

fly of which we have any record—a fly made of feathers and representing a bee. The Romans, we find, not only enjoyed the sport, but also made the same sort of jokes about it as we do to-day. The poet Martial, who had a sharp and mocking pen, wrote: 'Here comes the fisherman back from his idiotic pastime.' One of the earliest printed books in the English language is about angling—*A Treatyse of Fysshinge with an Angle*, printed in 1498, and said to have been written by the Lady Prioress of a nunnery. She gave some amusing advice on preparing maggots for bait. Izaak Walton's *Compleat Angler*, published in 1653, is one of the best loved of English classics.

The principles of fishing have changed very little through the ages, though there are some differences in practice. Rods are lighter now than they were; lines are both finer and stronger; modern reels made of light metal alloys enable us to cast much farther than could our ancestors with their wooden ones. The main difference lies in the fact that there are many more anglers to-day than there were 100 years ago; therefore, were steps not taken, the supply of fish in the rivers would run out. Angling clubs and individual owners have to restock their rivers from time to time, and various restrictions have to be imposed on fishermen. 'Close seasons', when the fish are spawning, have to be respected, as well as size limits and restrictions on the kind of fishing which may be practised.

The most skilled, the most exciting, and unfortunately the most expensive kind of fishing is angling for 'game-fish', that is to say, Salmon and Trout. As most of us graduate to this through catching tiddlers, and through bottom-fishing, Pike-fishing, and fly-fishing for Chub, it will be best to discuss these pastimes first.

Most beginners nowadays start by catching Minnows, not, as our ancestors did, with the bent pin and bit of string, but with real hooks with gut attached and a watercord line or bamboo rod, which can be bought for very little money. Indeed, Minnows have such tiny mouths that they are best caught without a hook at all —they will hang on to a small red worm and can be lifted gently out of the water and dropped into a jam-jar. Other small fish which are found in most streams, and sometimes even in ditches, are the Bullhead and the two kinds of Loaches, which live beneath stones, the Gudgeon which is fished for with a worm on the bottom, and the

ANGLING FOR SALMON ON THE RIVER TAY, SCOTLAND
The Times

surface-feeding Bleak, which takes a housefly or a maggot dropped on the top of the water. All these are useful as live-bait for the carnivorous fishes which live on Minnows and other small fry.

Sometimes a shoal of these fry can be seen scattering with a great commotion and jumping out of the water like silver spray. This means that one of the larger fish is on the move; and this is the moment to put a live-bait on the hook in the good hope of catching a Perch, a Chub, a Trout, or even a small 'Jack' or Pike. Of course, for serious Pike-fishing special tackle is used: a short, stiff rod, a big reel containing plenty of strong line, and a trace made of gimp or piano wire—for the Pike has sharp teeth which can bite through ordinary gut. Many people object to the use of live-bait on the grounds that it is cruel; and although there is some doubt whether fish feel pain in the same way that we do, it is certainly more pleasant (and much less trouble) to fish for Pike and the other carnivorous fish with artificial baits, spinners, and 'spoons', which can be bought for a shilling or two in the tackle-shops. Spinning is also good exercise which, unlike live-baiting, will keep you warm on a cold winter day.

However, both spinning and live-baiting are rather specialized sorts of angling, for which elaborate tackle is needed. Most anglers are content with what they call 'general fishing', a term which means that they go fishing for anything they can catch. They use a simple standard tackle consisting of a rod about 12 feet long, usually made of whole cane with a greenheart top, a small cheap reel, about 30 yards of line (undressed silk is best), a porcupine or goose quill float, a level gut cast about 2 yards long weighted with split-shot, and a smallish hook baited with bread-paste, a worm, or a maggot. With this tackle, in our rivers and larger ponds, it is possible to catch Perch, Roach, Rudd, Bream, Chub, Tench, Carp, Dace, and Eels.

The catch depends, of course, on the place, the season, the bait, and the method used. For instance, in most of our rivers Roach are caught by fishing fairly shallow and letting the bait go down with the current, making a new cast upstream when it comes to the end of the 'swim'. Bream and Tench, on the other hand, feed on the bottom, mainly in still water. Chub take best in the weirs and like a variety of baits, including the green 'silkweed' off the waterfalls, the hairy caterpillars (called 'withybobs') of the Buff-tip Moth, cherries, blackberries, or wasp-grubs. Perch are generally found at the edges of the rushes or among the lily-pads—their striped shapes can sometimes be seen moving like ghosts between the stems. They will take a worm, fished at mid-water; and when they are on the feed, they are the boldest biting of all our freshwater fish; Izaak Walton said of them: "They are like the wicked of the world, unafraid, though their friends and companions perish in their sight.' Carp, on the other hand, are the shyest fish that swim. They are rare in our rivers, but are often found in old stew-ponds and moats. 'Ponds and pools are generally his palaces', wrote Richard Franck, who lived at the same time as Izaak Walton, 'He loves good eating, but seldom travels far to fetch it.' Best of all he loves a very small, new, boiled potato. But you must 'study to be quiet' in order to catch a Carp, and the tackle, especially the gut, must be very fine indeed. When a Carp is hooked, he must be played very carefully, for he is immensely strong and sometimes weighs as much as 12 or 15 pounds.

Another big and strong fish is the Barbel, which is found in only a few of our rivers, notably the Thames and the Trent. A lobworm is the best bait; but Barbel go in shoals, and although the fisherman will have good sport if he finds a shoal, he will also have many blank days without a single bite. A boat is necessary for Barbel-fishing, and most anglers take the trouble to 'groundbait' a stretch of river for 3 or 4 days before they intend to fish it.

Chub, Dace, Roach, and Rudd will all take a fly, as well as bread-paste, worms, and maggots; they provide good practice for the beginner in the art of fly-fishing, which is the most exciting of all forms of fishing. Fly-fishing requires a special sort of rod, springy but not too whippy, and generally made of split-cane: the pieces are glued together so that the section of the rod is not round but hexagonal, and the more powerful rods have steel centres. Modern fly-rods are rather short—6 to 8 feet—and weigh only a few ounces. The line is made of oil-dressed silk, and is tapered from the middle towards each end. The gut casts are often tapered, too, which makes them easier to throw, even in the teeth of a wind.

There are two sorts of fly-fishing, 'wet' and 'dry'. In swift, turbulent streams 'wet-fly' is usually best; the fly is allowed to sink a few inches as the angler draws it towards him after the cast. 'Dry-fly' is practised in slower rivers, and particularly in chalk-streams, where the water is very clear. The fly and the end of the cast are oiled or greased, and the fly, instead of being dragged through the water is allowed to float over the fish in the same way that natural flies do before the current drowns them. Dry-flies are dressed differently from wet-flies: their hackles are stiffer (which helps them to float), and their wings are cocked upright instead of sloping backwards.

There are many scores of natural flies which form the food of fishes, and anglers have invented many hundreds of artificial ones to imitate them. However, the great and bewildering array of flies to be seen in the tackle shops is designed just as much to attract anglers as to attract fish, and there is no need to buy more than about a dozen patterns. Local anglers are the best people to say which flies are most successful in any particular district. Here are a few standard ones which are useful everywhere: March Brown, Wickham's Fancy, Greenwell's Glory, Iron-blue Dun, Olive, Red Spinner, Sedge (taken on warm evenings in summer), Black Gnat (in hot and sultry weather), Coch-y-bonddhu (particularly good in Welsh lakes), Alder, and of course the Mayfly in its short season.

Fly-casting is one of those tricks which cannot be learnt from books: it must be learnt on the river-bank or, indeed, on a lawn. At first it seems extremely difficult, but surprisingly soon the feel of it begins to come, and before long the fisherman finds he can drop his fly gently in the very spot where, a moment before, he saw the widening ripples of a rise. Nine times out of ten, if the fly can be dropped in the right place, the fish will rise again—and then if the line is tightened without tugging, the fish can be felt plunging on the end of it.

Salmon-flies are much larger and generally much brighter-coloured than trout-flies. They do not pretend to imitate the natural flies on the water, and their purpose is not so much to deceive the salmon as to irritate or provoke him into snapping at them—for salmon do not feed in fresh water, and as far as we know, they take our flies and spinning-baits out of annoyance or in play. Salmon-fishing is therefore less difficult than trout-fishing: we are less likely to frighten the fish with a clumsy cast. But there is a great art in knowing where the salmon is likely to lie, and it needs a good deal of skill to play the strong fish as he leaps and plunges, and at last to bring him safely to the net. In swift water a big salmon may take half an hour to land—and at the end of that time the angler will be nearly as tired as the fish.

See also Vol. II: BARBEL; CARP; PERCH; PIKE; SALMON.
See also Vol. VI: FISHING, HISTORY OF; SALMON FISHING.

ANGLING, SEA. Fishing in the sea with a rod and fairly light tackle can be just as good sport as freshwater fishing. Sea-fishing used to be despised by sportsmen, for in Victorian days it meant little more than taking a handline with a dozen hooks on the end, weighting it with a lump of lead, and dangling it over the pier. But now sea-angling is regarded as a sport. Much the same tackle is used in the sea as in the rivers (see ANGLING, FRESHWATER), but the tackle must be stronger and must be weighted more heavily because of the tide. The hooks are bigger, and different baits are used—sea creatures such as lugworms, sand-eels, prawns, shrimps, soft crab, mussels, or pieces of fish. With these baits can be caught most of the flat-fishes (Halibut, Plaice, Dabs, Flounders), and fish such as Whiting, Cod, Haddock, Ling, Grey Mullet, and John Dory. The various species of Wrasse, brightly coloured, tropical-looking fishes which live among rocks, give very good sport on light tackle in many parts of the coast —shellfish or a live prawn being the best baits for them. Conger Eels, which are also found among the rocks, require strong tackle, for they grow as long as 9 feet and have been known to reach a weight of 160 lb. Pollack and Coalfish, as well as Mackerel, Sea-bream, and Garfish, are caught by 'whiffing': a bait is trailed behind the boat, which is rowed or sailed about the fishing-area. A great variety of baits is used: sand-eels, lampreys, lugworms, bits of bacon, strips of fish-skin, artificial spinning-baits, white goosefeathers, large fancy flies, even silver paper. Pollack and Coalfish, which grow to more than 10 lb., fight well, and even a 2 lb. Mackerel on a light rod will give very good sport. Whiffing is a very pleasant way of catching fish in the sea, but fly-fishing is even better. The 'fly', of course, instead of imitating a real fly, represents a small fish, and generally consists of a couple of white feathers whipped on to a hook with tinfoil or silver wire. But it is cast from a boat, from the rocks, or from a reef at low tide, in exactly the same way as a trout-fly, with an ordinary fly-rod and line. It will catch Mackerel in certain places, and at certain seasons Pollack, Coalfish, Cod, and Bass. The Bass is the best fighter of all the sea-fish—indeed Bass-fishing can be described as the marine equivalent of Salmon-fishing. Unfortunately, shoals of surface-feeding Bass do not often appear off our coasts, and there are only a few places, notably the Isle of Wight and the Welsh coast, where they turn up regularly each season. The best place of all for Bass-fishing, the neighbourhood of the Eddystone Lightouse, is unfortunately very dangerous: the tides there are peculiar, and it is not at all unusual to see four large waves approaching the boat from four different directions; therefore it is not wise to go near the rock except with an expert boatman and when the sea is very calm.

The most thrilling of all kinds of sea-fishing is, of course, the contest with big game fish, such

SEA ANGLING OFF THE MEDITERRANEAN COAST
New York Times

as the various kinds of Sharks and Tarpon, found mainly in tropical waters (*see* BIG GAME FISHING). These monsters can sometimes take a whole day to land. A fine account of battles with the big game fish of the sea is given in Mr. Zane Grey's books. The only 'big game' found off our British coasts is the Tunny. These are caught by trailing a dead fish behind a motor-boat: Scarborough in recent years has become a noted centre for this kind of angling. Sharks are caught in the same way off the south-west coast of Ireland.

See also BIG GAME FISHING.
See also Vol. VI: FISHING, HISTORY OF.

ANIMALS, *see* AQUARIUM; CAGE BIRDS; CATS; DOGS; HORSES; NATIONAL PARKS; PERFORMING ANIMALS; PETS; ZOOLOGICAL GARDENS.

AQUARIUM. Many different kinds of fish can be kept in a small aquarium of about 2 ft. 6 in. by 1 ft. 6 in. and 1 ft. deep. For a cold-water tank, in which the water is kept at room temperature, there are several varieties of Goldfish, the American Sunfishes, common Sticklebacks, the common Catfish, and Loaches such as the Weather Fish which grows very excited and dashes about the tank when thundery weather is approaching. River fishes such as Roach or Dace are not suitable for a small tank, for they need more space and running water if they are to remain healthy.

In a tropical aquarium there are many more fish, other water animals, and plants which can be kept. Curiously enough, it is easier to keep going a tropical aquarium than a cold-water one. The temperature of the water must not fall below 60° F. Thermostatically controlled heaters can be used, or an electric bulb may be hung down into the water to light it at the same time as heating it. As both animals and plants need periods of darkness, the top light must be substituted by another heater at night; this can be a bulb embedded in the sand on which the tank stands.

Many aquarium fish are bred in captivity, and have been so carefully selected and improved that there are now a number of beautiful fish not found in the wild state at all. Foremost among these are some of the South American 'viviparous' species, that is, fish that do not lay eggs, as do most fish, but bring forth well-developed young, able to swim about and feed
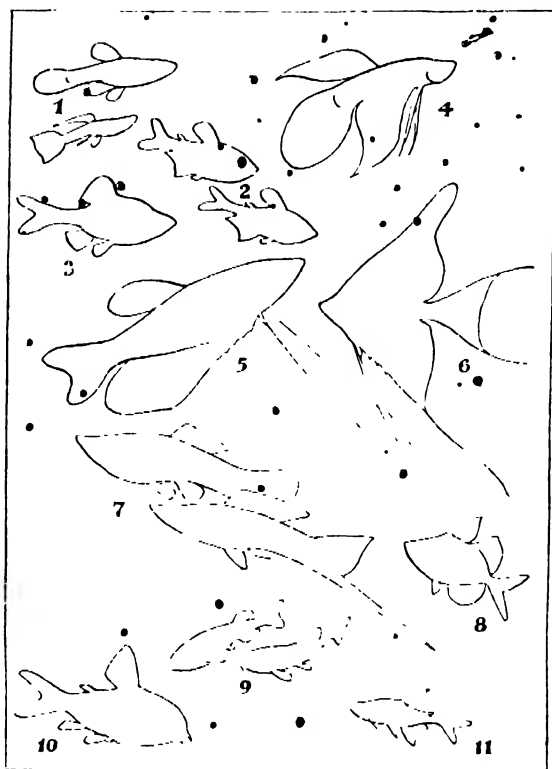
KEY TO THE COLOUR PLATE OPPOSITE PAGE 32
1. Guppy or 'Millions' (male below). 2. Flame-fish (male above). 3. Banded Barbel. 4. Fighting-fish (male). 5. Pearl Gourami. 6. Angel fish. 7. Sword-tail (male below). 8. X-ray fish. 9. Zebra fish. 10. Leopard catfish. 11. Neon fish

immediately after birth. Examples of these are the Sword-tail, the Guppy or Millions fish, the Platy (short for *Platypaecilus*, its scientific name) and the Mollie (*Molliensia*). In a small tank the mother of a 'live-bearing' species may eat her babies as soon as they are born, and steps have to be taken to protect them. Sometimes a jungle of plants is grown at one end of the tank so that the young ones can take shelter.

Other interesting aquarium species are the Zebra fish of India, the beautiful Angel fish of the Amazon, the brilliant Neon fish, and the East Indian X-ray fish, which is so transparent that most of its skeleton and internal organs are visible.

Fish breathe by extracting oxygen from the water, which is replaced in the water from the air at the surface. The tank must not be overcrowded or there will not be enough oxygen

available for all the fish to breathe. The right proportion is one inch of fish to a gallon of water. When fish are transferred from one receptacle to another, the water in each must be at the same temperature or the fish may take a chill and die. Also, the aquarium must be replenished with water, preferably distilled or rain water, at the correct temperature, to make up for what is lost by evaporation. A sheet of glass as a cover on the tank will reduce evaporation and serve as protection.

Plants are necessary in an aquarium to maintain a proper balance of life in the water. They inhale the carbon dioxide which the fish exhale, and they exhale oxygen which the fish need. Snails are useful scavengers in a cold-water aquarium.

Prepared fish foods can be used as a basis for feeding; but fish also need fresh, live food such as water fleas (*Daphnia*) or blood-worms (larvae of midges). In place of these they will eat finely grated raw meat, fish, or shrimps. They should not be given more than they can eat at one meal or it will be left to decay and foul the water. Some of the smaller Catfishes or Loaches are useful in a tank as they will nose about in the sand for the scraps left by other fishes.

Generally a fish that is healthy will spread his fins well out from his body, and swim evenly and boldly through the water. Ill health will be shown by the fins drooping or lying along the body, by jerky swimming, or by the fish remaining stationary in a corner.

ARCHERY (Toxophily). The art and practice of shooting with a bow and arrow dates back to the Stone Age, and Old Stone Age cave-drawings in Spain show that equipment and technique were already well developed (*see* PREHISTORIC TOOLS AND WEAPONS, Vol. I). Every primitive race, from the Eskimo to the African Pigmy, has made use of bow and arrows, the single exception being the Australian Aborigine who used a boomerang. Whether the bow was 3 feet or 8 feet long, the arrows tiny and poisoned or elongated for shooting fish, the general principles of archery were common to all primitive peoples.

The bow and arrow were also among the earliest weapons of warfare: the ancient Egyptians, Assyrians, Persians, Scythians, and Parthians were all notable archers. In the Middle Ages the Normans used the bow in invading

England; and later, at Falkirk, Crécy, Agincourt, Poitiers, and Flodden, the long-bow made the English archers the most famous troops in Europe, partly because their arrows could pierce the thickest armour. Everywhere in Europe, except in England, the much more powerful cross-bow was preferred to the long-bow. But five or six arrows could be shot with the long-bow in the time taken to shoot one with the cross-bow—an important consideration. In spite of the invention of gunpowder and of hand-guns, the bow was sufficiently formidable to remain a factor in European warfare as late as 1590, after which archery was used in Europe only in hunting and as a pastime. The cross-bow, however, was used by Chinese armies as late as 1860.

In England, up to about 1600, archery as a sport was encouraged, just as rifle-shooting is to-day, to provide a reserve of skilled men for war. Merchants were compelled to import bow-staves, and the planting of yew-trees from which bows were generally made was compulsory in church-yards. In the 17th century archery persisted as a sport and was popular with Charles II. After that it almost died out, until it was revived in the 1780's, and reached the height of its popularity in the second half of the 19th century. Archery as a serious sport is somewhat limited in England to-day, although in America it is still very popular. Stories of the feats of archery performed by legendary heroes, such as Robin Hood, or William Tell, have always played a part in folk-tales. Exaggerated accounts of such fine marksmanship have led to the expression 'drawing the long-bow' for 'telling an exaggerated story'.

Bows have been made in various ways and of various materials. The simplest sort, which reached its fullest development in the 6-foot English long-bow, is made of a single stave. Modern bows usually consist of two staves spliced together in the 'hand' or centre of the bow. Both these types are known as 'self' bows. The horn bows made in Greece and Java were of little value; but a bow composed of layers of wood, horn, and sinew was used commonly, and was of equal excellence with a good self bow, although only the latter has ever been used in England. The self bow usually measures about 6 feet: the centre 18 inches of the bow should be unbending, with the elasticity increasing towards the end of each arm: the arms should be

absolutely symmetrical and of equal power. The strength of the bow is measured by the number of pounds required to draw it: thus in talking of a bow, weight always means strength, not heaviness. The usual weight of a man's is about 50 pounds. The length of bow and arrows, and the weight of the bow, must be in proportion to one another, the proportions depending on the use for which the bow is designed. The height and strength, as well as the preference of the archer, however, are the final determining factors in selecting a bow. The temptation to use too heavy a bow should be resisted. Yew, especially Italian or Spanish yew, is the best wood. The 'back', the side of the bow distant from the archer, should give elasticity; the 'belly', the side nearest to the archer, should give strength to the bow. The 'cast' of a bow is a collective term for its strength, resilience, feel, and general performance in shooting. Bows should be of well-seasoned wood—it takes perhaps 6 years to make a first-rate one, the process being much the same as in making cricket bats. The bow-string is made of hemp, treated with special glue, and is fitted on to 'nocks' in the two 'horns', or tips, of the bow. A bow should be used by one person only, and should not be used for too long on end lest it lose cast (become warped).

The arrow usually measures about 28 inches, though the cloth-yard shaft for the long-bow was probably 37 inches in length. Longer, lighter arrows are used for long-distance shooting, and shorter, heavier ones for short-distance. Arrows are usually 'footed' with hard wood at the point or 'pile' end, the rest being made of softer wood. Stone Age Man made flint or bone arrow-heads, and fishbones and teeth have also been used. The modern arrow is tipped with steel. The arrow must be completely straight, and the three feathers should curve slightly to impart a rotary movement, as rifling does to a rifle bullet. Nocks, or notches, are cut in the butt end to fit on to the centre of the bow-string at the 'hocking point'. The arrow-maker is known as a 'fletcher', the bow-maker as a 'bowyer'. Other items of an archer's gear are the 'brace', a piece of stiff material, usually leather, fastened to the wrist of the bow arm to protect it from the bow-string when released, and the shooting-glove, or 'tips', which guard the fingers when drawing the bow and holding it at full draw while aiming. Some modern American bows have sighting devices, but the value of these is doubtful.

A LADIES' COMPETITION AT AN INTERNATIONAL ARCHERY MEETING. *Sport and General*

America has also developed good metal bows and arrows.

According to Ascham, the famous Tudor author of *Toxophilus* (1545), there are five main points in shooting—standing, nocking (fitting the arrow on to the bow-string), drawing, holding (aiming), and loosing; and to achieve the best results, all these actions should be performed correctly.

The most common form of the sport is target-shooting. The target is 4 feet in diameter, faced with straw, with equal rings radiating outwards of gold, red, blue, black, and white: these count 9, 7, 5, 3, and 1 points respectively. Two targets are set opposite one another, generally between 50 to 100 yards apart. The archers shoot three arrows at the target from one end, and then cross over and shoot back. The most common form of competition is the 'York Round', of seventy-two arrows at 100 yards, forty-eight at 80, and twenty-four at 60 yards. The highest score for a Double York Round ever made is 1,637 (279 hits) by Larry Hughes, an American, in 1941. However, Horace Ford, an Englishman, who was at his best during the 1850's, was probably the greatest all-round archer of modern times.

Other forms of competitive archery are 'clout-shooting', 'rovers', and long-distance shooting. In clout-shooting, the target is only 2 ft. 6 in. in diameter, set at 160–240 yards. Rovers con-

sist either of casual marks at uncertain distances, or of a series of differing set marks at varied distances—this is a sort of arrow golf. Long-distance shooting is self-explanatory: the record being upwards of 400 yards for a self bow, upwards of 500 yards for a composite bow.

The Grand National Archery Society is the supreme archery authority in England. The leading English clubs are the Royal Toxophilite Society in London and the Woodmen of Arden in Warwickshire, while the Royal Company of Archers, founded a century earlier, in 1676, is not only the leading Scottish society, but also the King's official Bodyguard in Scotland. Many county and local archery clubs also exist. Some archery prizes, such as the Peebles Silver Arrow and the Scorton Arrow, date back to the early 17th century.

ARTS COUNCIL. The Arts Council of Great Britain was set up by the Government in 1945, and in 1946 it was given a Royal Charter. It is not a Government Department, but it has the advantages of one without the disadvantages. Its money comes from the Treasury, but is spent by a small, independent body of men and women who are chosen for their personal distinction, who give their services without payment. Their policy is carried out by directors of art, music, and drama, who are specialists in their particular field.

The Arts Council had its origin in C.E.M.A., the Council for the Encouragement of Music and Arts, during the Second World War. Its object was to take concerts, plays, and exhibitions of painting all over the country, to small places as well as large, and above all, to people who were cut off by the war from their usual opportunities of enjoying the arts. It was really an experiment in bringing the arts into everyday life. It took unexpected forms, and it led to unexpected results. One part of the experiment was a series of concerts in air-raid shelters during the London 'blitz'. Not only were they popular at the time, but they led to the founding of permanent music clubs among those who had enjoyed them. In the same way, concerts in factory canteens were an introduction to 'live' music for a number of people who later formed and ran their own music societies.

Just as musicians toured the country, playing in strange makeshift concert halls, so actors visited many remote towns and villages and performed in buildings never intended as theatres.
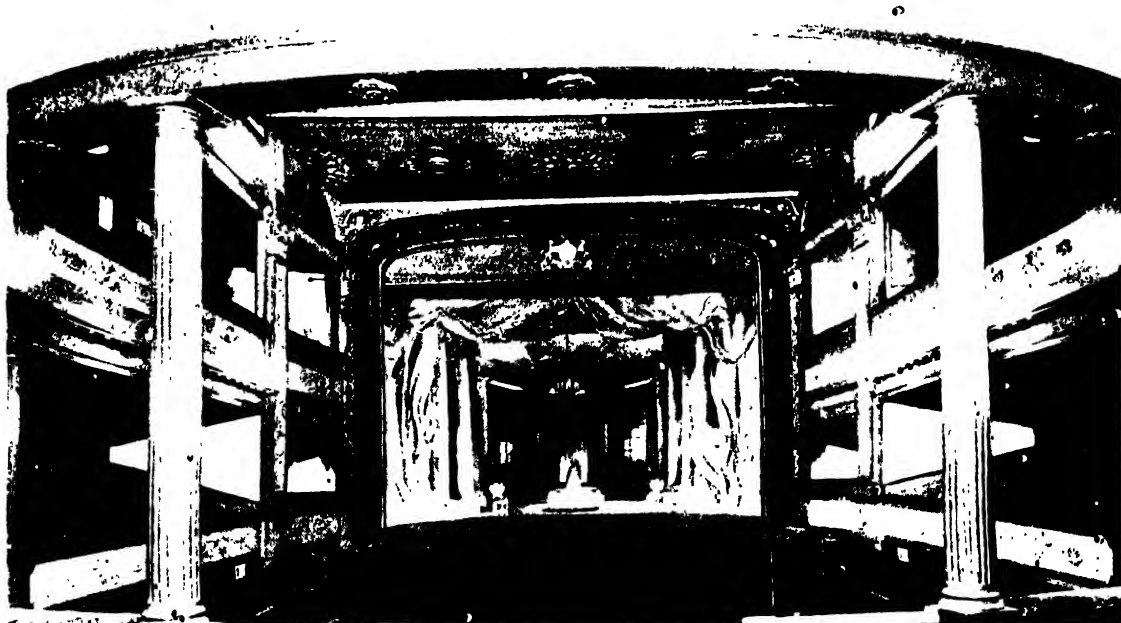
INTERIOR OF THE THEATRE ROYAL, BRISTOL
An 18th-century theatre now managed by the Arts Council. *Desmond Tripp*

There were plays in miners' welfare halls, in schools, churches, and factories, and on village greens. Here, again, new audiences were discovered. They soon proved, by their enthusiasm, that serious interest in the theatre was alive and widespread in England, Scotland, and Wales. The painters did their share of pioneering, too. Exhibitions travelled to the most unlikely places and were shown anywhere from a cathedral to a department store. Often, to those who saw them, original paintings were as unfamiliar as concerts or stage plays 'in the flesh'. They stirred a wide interest, critical as well as appreciative, and the modern pictures, in particular, often provoked violent battles in letters, newspaper articles, and speeches.

This widespread interest made the work of C.E.M.A. exciting and valuable. It also guarded against any centralized system for the arts being worked out in London and planted on the rest of the country. Everywhere, it was found, people welcomed an opportunity of having concerts, plays, and pictures, but they wanted to have them in their way and according to their own choice. The task of C.E.M.A. was therefore not so much to provide the arts as to encourage others to provide them, by means of practical help and grants of money.

This is also true of the Arts Council. which has taken the place of C.E.M.A. The Arts Council gives help in many different ways and to many different kinds of organization. Sometimes it will pay thousands of pounds to a great orchestra or a theatre company to perform the finest music and plays; at another time it will give £5 or £10 to help a village concert society. Sometimes it will arrange an exhibition of famous paintings for the great art galleries; and sometimes it will send a few small pictures to hang in a village hall. Lord Keynes, who was Chairman of the Arts Council when it was made into a permanent organization, expressed its purpose well when he said:

The task of an official body is not to teach or to censor, but to give courage, confidence, and opportunity. . . . How satisfactory it would be if different parts of this country would again walk their several ways as they once did, and learn to develop something different from their neighbours and characteristic of themselves. Let every part of Merry England be merry in its own way.

ASHBURTON SHIELD, *see* RIFLE SHOOTING.

ASSOCIATION FOOTBALL. 1. LAWS AND GENERAL PRINCIPLES. Association Football is played with a spherical leather ball of 27–8 inches' circumference and 14–16 ounces in weight on a field marked as shown in the figure on p. 24, the normal length of a game being two periods of 45 minutes each. Each of the two teams consists of eleven players, one of whom must be the goalkeeper, whose colours must distinguish him from the other players. The general object of the game is to propel the ball into the opponents' goal, using the feet, the head, or the body, but not the hands or arms. Only the goalkeeper can use his hands. At the beginning of the game the captains toss, and the winning team has the option of choice of ends or of the kick-off. The ball is then kicked-off from the centre of the field into the opponents' half of the field— every player being obliged to be at that time in his own half. In addition, no opponent is permitted within ten yards of the ball until it is kicked off. When re-starting after half-time, ends are changed, and the kick-off is then taken by a player of the opposite team to that which started the game. If the whole of the ball passes over a touch-line, either on the ground or in the air, it must be thrown in from the point where it crossed the line by a player of the team opposite to that of the player who last touched the ball. If the whole of the ball passes over the goal-line (but not between the goal-posts) after having last been played by one of the defending team, the attacking team are awarded a corner-kick from which a goal may be scored direct; but if an attacker kicks it over the goal-line, the game is re-started by a goal-kick from a point within that half of the goal area nearest to where it crossed the line.

Those, broadly, are the elementary rules of soccer, and they are really quite simple and easy to understand. There is one other law, the one relating to off-side, which is not so simple, especially in practice. This law states: 'A player is off-side if he is nearer his opponent's goal-line than the ball at the moment the ball is played, unless (a) he is in his own half of the field of play; (b) there are two of his opponents nearer to their own goal-line than he; (c) the ball last touched an opponent or was played by him; (d) he receives the ball direct from a goal-kick, a corner-kick, a throw-in, or when it is dropped by the referee.' The important phrase is 'at the moment the ball is played', because so often an

THE ASSOCIATION FOOTBALL PITCH
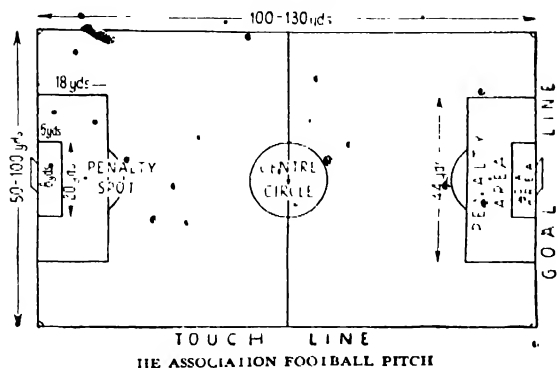
attacker receives the ball in an apparently off-side position, but was on-side when the ball was passed to him: by clever anticipation he has run forward and is seemingly a long way off-side when the ball reaches him. This law is the most difficult part of soccer for the average player and spectator to interpret, because a split second makes all the difference. Deliberate attempts are often made by full-backs to throw the opposing forwards off-side by running forward a few paces just before the pass is made, and this method still forms an accepted plan of defence. Many years ago, McCracken, a famous full-back of Newcastle United, made a speciality of this manœuvre, and frequently he would throw a whole forward line off-side. Players cannot be off-side from a throw-in; for that reason they should make as much ground as possible. Similarly, a player cannot be off-side from a pass in which the ball travels backwards, be it ever so slightly—so if in doubt he should keep just behind the player with the ball.

2. TACTICS IN ATTACK. The team includes five forwards, and their primary duty is to score goals. The modern method of doing this is by means of the so-called 'W formation', with the outsides and centre-forward forming the tops of the W and the two insides forming the base. This scheme came into general use soon after the alteration in the off-side law in 1925, and by 1930 the W was quite a deep one. More recently, however, it has become either a more shallow W or else a lop-sided one, with one of the two insides playing behind his colleagues and doing much of the constructive work in mid-field. The result is that these two players—the inside-left and the inside-right—are to-day the key men of the side, and it is largely their job to dictate the plan of attack.

Progress is usually made by a shrewd mixture of the long and short passing games. As the name implies, the long-passing game consists of a series of lengthy cross-kicks from one side of the field to the other, such as from inside-right to outside-left, who might then swing the ball across to the outside-right—for him to centre right over to his inside-left, who by that time should be in a position to shoot for goal. This scheme has the big advantage that it keeps suddenly changing the direction of the attack, thus catching the defenders on the wrong foot and facing the opposite way. It is particularly useful on wet days, when the ball skids rapidly on the slippery ground, and when defenders themselves find it hard to turn.

The short-passing game, on the other hand, reckons to make progress by means of a series of delicate little passes or flicks between two or three players who are generally only a few yards apart. It is most commonly used by the three inside forwards, but as a triangular game it can be played by a wing half-back and the two forwards immediately in front of him. This short passing demands exceptional accuracy, for a pass even a yard away from its objective might ruin the whole movement. Also, because the attackers are bunched together, one determined defender can often break up the whole movement (which, incidentally, should always be going goalwards as rapidly as possible). Because of the great accuracy required, then, the short-passing game is rarely successful by itself; but a clever mixture of long and short passes, to keep the defenders guessing all the time, is undoubtedly the best scheme for most occasions.

One important development of the long-passing game in these modern days is wing-to-wing play. The idea is for the outside right to receive a forward pass, cut in goalwards instead of keeping close to his touch-line, and then, when challenged, to centre right across goal to his outside-left, who in turn has cut in towards the edge of his opponents' penalty area and is able to put in a first-time shot with his right foot. This obviously necessitates the wingers being able to shoot with either foot, a skill which will reward the constant practice required. Another method is the straight-through pass, usually made by an inside-forward pushing the ball straight forward between two of the defenders to enable the centre-forward to go through. This pass must be made at exactly the correct strength,

and the centre-forward must be very fast; it is then often very effective, and has resulted in many goals being scored.

3. Tactics in Defence. As better and better schemes of attack have gradually been evolved during the past hundred years, one player after another has been withdrawn to aid the sorely pressed defenders; and to-day we have, in theory at any rate, six of the team whose primary responsibility is to prevent the opposing five forwards from scoring. Three halves, two backs, and a goalkeeper form the theoretical defence; but in practice the two wing-halves nowadays are general utility men; and usually one of them —and occasionally the other also—is helping to back up his forwards in attack. Owing to the withdrawal of the centre-half to make a 'third back', the accepted defensive alignment is now a goalkeeper covered by a line of three backs with the two wing-halves playing a kind of free-lance game in front of them. This allows con-siderable elasticity; but with the right and left backs marking the opposing wingers out near the touch-line, a great deal of responsibility for covering the vital gap down the middle rests with the new type of defensive centre-half, now known as the third back or 'policeman'. His job demands great patience, strong tackling, and good head-work to blot out the opposing centre-forward, but little constructive play is expected of him. Yet his is a very harassing task, because he must realize that any mistake by him is liable —almost certain, in fact—to lead to a goal.

All defenders must mark their own particular opponents very closely, especially at throws-in, corner-kicks, and free-kicks. At the same time, if they are to be flexible, they must sometimes leave their own man to attack another player likely to score a goal, an important decision which has to be taken at a second's notice. It is only in a real emergency that a defender will 'boot' the ball whole-heartedly out of his penalty
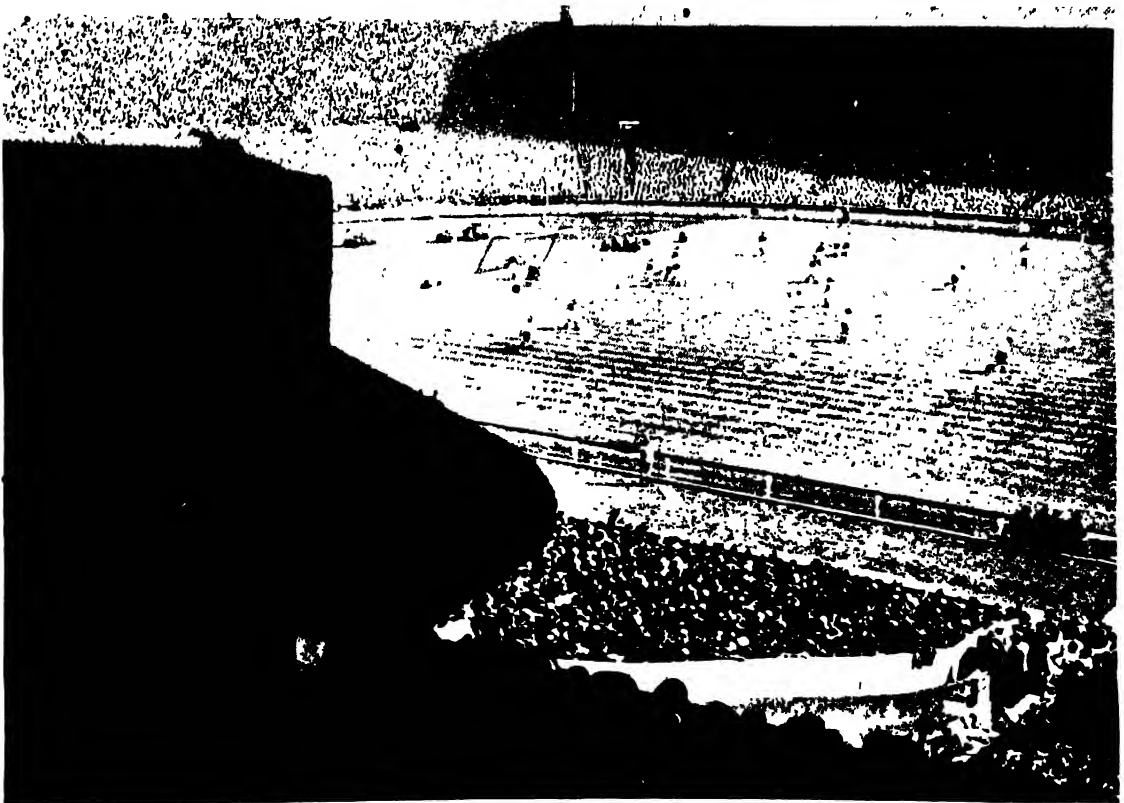
A CUP-FINAL AT THE EMPIRE STADIUM, WEMBLEY
A television camera is seen in the foreground. *B.B.C.*

area; ideally, every clearance should be in the nature of a constructive pass to one of his own side. Backs must realize, too, that their goal-keeper has every right to expect a considerable measure of support from them—particularly when he advances to cut out a centre or to punch away a corner: on such occasions, one or both backs should fall back on to the goal-line to cover any failure on the part of their colleague.

4. NOTES ON INDIVIDUAL POSITIONS. (1) The goalkeeper should be tall, agile, and a good kicker of a stationary ball. He should keep his body behind his hands whenever possible as a second line of defence, especially in wet weather. He should be prepared to quit his goal in order to narrow the shooting angle when an opponent breaks clean through. Clearances should be aimed to start a colleague on the attack—a long, accurate throw is better in this respect than a high, aimless punt.

(2) The full-back must be a good tackler, and as fast as possible, to mark the opposing winger. He should tackle shrewdly and not dash in whole-heartedly when his opponent has the ball under proper control. When beaten, he must be able to recover rapidly. He should endeavour to keep on the inside of his man, in order to prevent him from cutting in and shooting, and he must learn to co-operate with his goalkeeper.

(3) The wing-half must be able to control a ball really well, trapping (with feet, body, or head), dribbling, and making constructive passes. He should always be ready to change defence into attack, and he should be a specialist at throwing-in, particularly the occasional long throw.

(4) The centre-half should be a strong, cool defender, expert in head-work. He must police the opposing centre-forward and blot him out of the game if possible. If, after obtaining pos-session of the ball, he can start a constructive movement, so much the better.

(5) The wing-forward should be fast and pos-sess good ball-control at speed. He should be an expert at corner-kicks, both in and out swingers, and should be prepared to cut in and shoot hard from the edge of the penalty area. He must learn wing-to-wing play with his partner on the other flank.

(6) The inside-forward is a key man. Like the wing-half, he must work hard throughout the game as a maker of openings and a constructive

dribbler with an eye for the open spaces. He must be present at all corner-kicks.

(7) The centre-forward should be strong, bustling, and a hard shot. He should be able to leap high into the air to head in centres and corner-kicks. He must be ready to interchange with colleagues to lure the opposing centre-half out of position. He should practise receiving a pass from behind him, juggle the ball a few paces, and then shoot hard on the run. He should have the knack of being in the right place at the right time.

ASSOCIATION FOOTBALL, HISTORY OF.
Although the origin of football goes back to the Middle Ages, the game of association football as we know it to-day is not a hundred years old. Centuries ago, various forms of 'mob' football were played at fairs or on special holidays such as Shrove Tuesday; but on such occasions the game was only rough-and-tumble, with a ball as the excuse for hundreds of people to enjoy a day's exercise. As these contests sometimes de-veloped into serious brawls, 'foot ball' fell into such disrepute that for long periods it was banned, and little was played until after the Napoleonic Wars.

The first essential to make a real game out of this mob football was to limit the number of players, and this step was taken about the middle of last century at various Public Schools, at the Universities of Oxford and Cambridge, and in the Sheffield and Nottingham areas. Gradually there emerged the necessity for some sort of co-ordinating body to draw up rules and regu-lations; as a result, the Football Association was founded in 1863, and in that year 'soccer', the University slang for association football, was really born. In those days, an eleven consisted of a goalkeeper, one full-back, one half-back, and eight forwards who dribbled the ball all over the field, just like eight modern rugger forwards in the loose. Passing, as we know it, had not been thought of. Slowly, however, these eight forwards began to realize that progress could be made quicker by passing the ball into the more open spaces. To counter this move, one forward after another was withdrawn to strengthen the defence, until by 1883 the modern formation of a goalkeeper, two backs, three half-backs, and five forwards had been adopted.

Although this modern formation has been in use for such a long time, it must not be thought

that soccer to-day is identical with the game as played in the 1880's, for development has been steady and progressive. In the old days very heavy charging was allowed, even when the ball was not being played. The goalkeeper's job was particularly difficult, because it was considered a good plan of attack for a player to lob the ball goalwards while two or three forwards rushed the goalkeeper and tried to prevent him from getting near it. The headwork of those days was either very feeble or completely non-existent, at any rate amongst amateur players, who, incidentally, often played in soccer caps. The usual dress for amateur players was knickerbockers fastened tightly below the knee and overlapping the stockings, so that no knee or bare leg was visible. This was obviously so unsuitable a costume that, during the 1880's, the knickerbockers were cut above the knee, making shorts. The Corinthians, the greatest of all amateur clubs, used to play in cricket shirts and sometimes in long white cricket trousers, instead of the tight-fitting breeches. Shin-guards in those early days were considered effeminate, but later they were worn as a protection under the stockings. Ordinary boots with three additional bars across the sole were used at first, but, as the game developed, special boots with hard toe-caps were evolved.

Besides these changes in the personal equipment of the players, there were many other developments between the years 1880 and 1900. Originally, the goals consisted merely of two uprights; then tapes were used to join the uprights 8 feet above the ground; and finally the wooden cross-bars were adopted. This last improvement, together with the introduction of goal-nets, stopped many bitter arguments over doubtful goals, and made the referee's task much easier. Before 1891 the game had been controlled by a referee and two umpires. These umpires were often just extra players for their respective sides, and it was the referee's job to decide all cases of difference between them; but with two good and impartial umpires, the referee might go through a whole game without having to make a single decision. As in cricket, appeals always had to be made vocally; but after the formation of the Referees' Association and the substitution of linesmen for the umpires, the referee was given the power to penalize without an appeal being made to him. He was also allowed to award a penalty-kick for serious infringements of the rules within 12 yards of the goal-line. In this connexion it is worth recalling that in 1881 a player prevented the certain scoring of a goal by handling the ball, with the result that power was at once given to referees to award a goal under such circumstances. For one brief season referees thoroughly enjoyed themselves giving away goals, but at the next annual general meeting of the F.A. the law was repealed.

With the gradual development of association football during the latter half of the 19th century there came the problem of the professional player. At first it was only a question of half a crown a match; but as the game continued to draw bigger and bigger crowds, the commercial

A GAME OF STREET FOOTBALL IN THE 18TH CENTURY
From an engraving by Bowles and Carver

side increased, and professionalism was legalized in 1885. Three years later the Football League was founded (see ASSOCIATION FOOTBALL LEAGUES), the original twelve members being Accrington, Aston Villa, Blackburn Rovers, Bolton Wanderers, Burnley, Derby County, Everton, Notts County, Preston North End, Stoke, West Bromwich Albion, and Wolverhampton Wanderers. To-day, professional soccer is a highly organized business, with managers, trainers, scouts, coaches, groundsmen, secretaries, clerks, stewards, and many others, in addition to the actual players dependent upon it for a living. The gate-money taken at any of the big matches amounts to so large a sum that the clubs are rich. Players rapidly increased in value. In 1905 Alf Common was transferred from Sunderland to Middlesbrough on payment of £1,000; by 1938 Arsenal were reported to have broken all records by paying Wolverhampton Wanderers £14,000 for Bryn Jones,

their Welsh international inside-left. By 1949 fees of £20,000 have become fairly common.

Unfortunately, in 1907, professionalism led to a disastrous 'split' between the Football Association and the leading amateur clubs. The immediate cause of the trouble was the adoption by the F.A. of what was known, to the amateurs at any rate, as the 'coercive' policy. Local associations, some of which had been formed long before the recognition of professionalism, were then compelled to affiliate all professional clubs in their area—previously it had been a matter of choice. As a result, the Amateur Football Association was formed as a separate association confined to amateur clubs. Fortunately, the 'split' did not last long, and a reconciliation was effected just before the First World War, in 1914. After peace was declared in 1918, soccer began a tremendous boom. Players who had enjoyed their games of football in almost every part of the world, under all sorts of conditions of climate and ground, came back to these islands determined to maintain our great national game at a high standard. Both amateur and professional soccer flourished. In 1919 the League was extended to include forty-four clubs; in 1920 the Third Division South was formed; and in 1921 there appeared the Third Division North. Amateur standards were raised, the Corinthians entered the F.A. Cup Competition and held their own against the best professional clubs in the country, and a small number of amateurs even won full international caps. Grounds had to be enlarged, and the first Cup Final at Wembley Stadium in 1923 attracted so many would-be spectators that only a heroic piece of organization by a police official on his famous white horse in the centre of the crowded playing pitch saved the match from becoming a major tragedy.
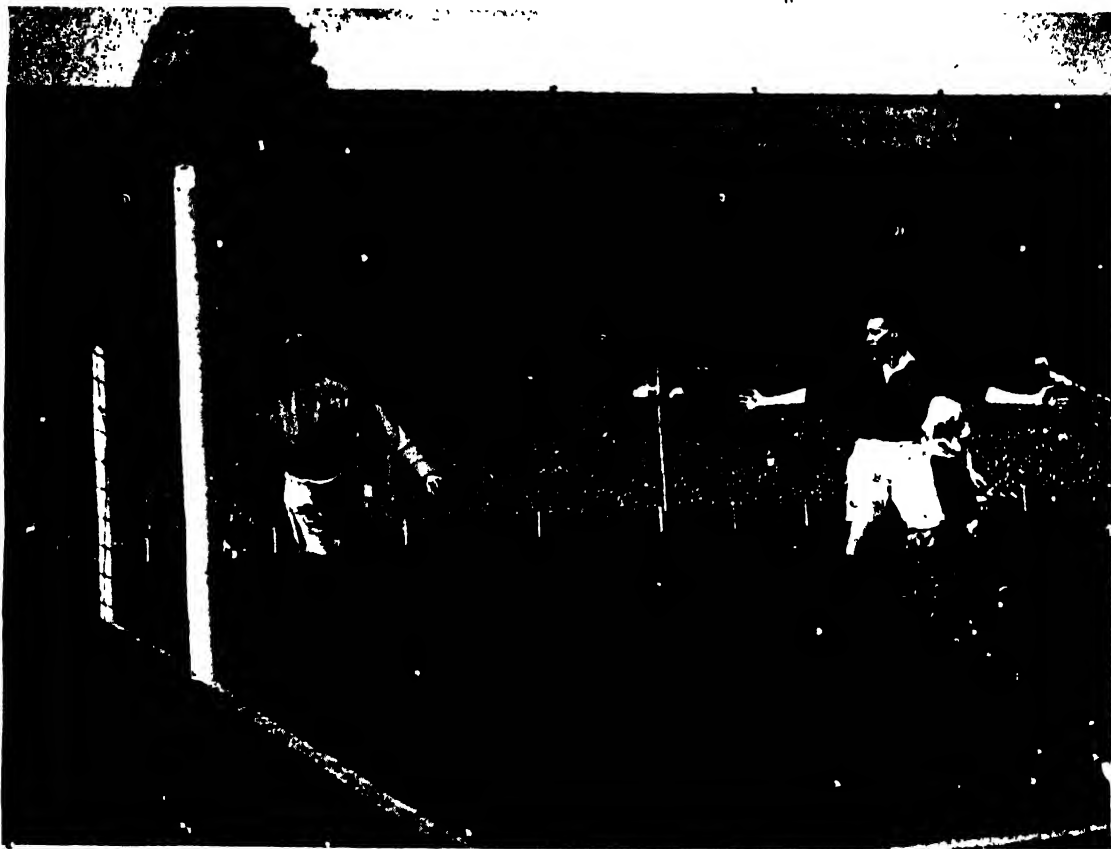
SCORING A GOAL IN A MATCH BETWEEN ENGLAND AND SCOTLAND AT WEMBLEY, 1947
Fox Photos

In 1925 an important change in the off-side law took place. Before 1925 a player was off-side unless there were three of the opposite team between him and the opposing goal at the moment when a player of his own team passed the ball forward. The new rule reduced the number from three to two, and has undoubtedly improved the game from many points of view. Play is now much faster, more goals are scored, and there are fewer drawn games. At the same time, by this simplifying of the off-side rule (one of the most difficult from the point of view of the referee) the opportunity for unsatisfactory decisions is much reduced.

Since 1930, although soccer has continued to expand, the gap between the amateur and the professional has steadily widened, the standard of the professional being normally so much higher than that of the amateur; but the fact that in 1945, the first season after the Second World War, the record number of over 50,000 spectators watched the final of the Amateur Cup shows that interest in the amateur game is still increasing. There are football clubs in nearly every town in Britain, and matches between them are organized by the ASSOCIATION FOOTBALL LEAGUES (q.v.). Indeed there are very few villages so small that they have not got their local football club. Better accommodation for supporters, running commentaries on the radio, television, and betting in the FOOTBALL POOLS (q.v.) are all playing their part in making soccer an integral part of the lives of millions of people.

The first international soccer match took place between England and Scotland in 1872 at Glasgow, and it resulted in a goalless draw. Since then, these two countries have met sixty-three times, the matches always now being either at Glasgow or at Wembley Stadium. England first played Wales at the Oval in 1879, and Ireland at Belfast in 1882. In these series of 'home' internationals Scotland has the highest record of victories. In addition, England has at various times played almost all the countries of Europe (starting by a match with Germany in 1901), as well as South Africa and Australia. Now about 100 international matches are played each year, and these are under the control of the Federation of International Football.

Wherever Britishers have gone, as soldiers, missionaries, teachers, traders, they have taken their football with them. The game is simple; almost any ground will do; no equipment is needed except a ball. In consequence its popularity has spread. As fresh countries began to adopt the game, they often secured the services of British coaches. In some countries, such as Australia, established national games have been developed from Association football or from a mixture of this and Rugby football.

See also ASSOCIATION FOOTBALL; FOOTBALL POOLS.

ASSOCIATION FOOTBALL LEAGUES.

The original Football League, founded in 1888, consisted of twelve professional football clubs: to-day there are hundreds of leagues, embracing thousands of clubs. Most of these, of course, consist of amateur teams; but although there are only a few professional leagues, they set a definite standard and, consequently, obtain most of the publicity. Starting at the top, there are the First and Second Divisions of the League, together with the Third Divisions North and South. Each of these four leagues consists of twenty-two clubs, almost all the players being professionals, because few amateurs nowadays can reach the required standard. Interest and excitement are maintained right through to the last Saturday of each season by a system of promotion and relegation, the top two clubs in the Second Division changing round with the bottom two clubs in the First Division, and the last two clubs in the Second Division dropping out to make way for the leading club in each of the Third Divisions. In the event of a tie in total points—2 for a win and 1 for a draw—after the last matches have been played, the decisions are made on 'goal average'. At the end of the 1927 season Portsmouth gained promotion from the Second Division after an exciting race with Manchester City by a fraction of a goal! Clubs play each other twice, once at home and once away, so that forty-two matches have to be crowded into a season, exclusive of cup-ties. As there are not enough Saturdays to go round, matches must be played during mid-week at the beginning and end of the season, when the evenings are light enough. In addition to this, there are often very busy periods, sometimes with three matches in four days, during the Christmas, New Year, and Easter holiday times. So it will be seen that to play first-class football regularly throughout a season is a very strenuous affair, and a full-time occupation.
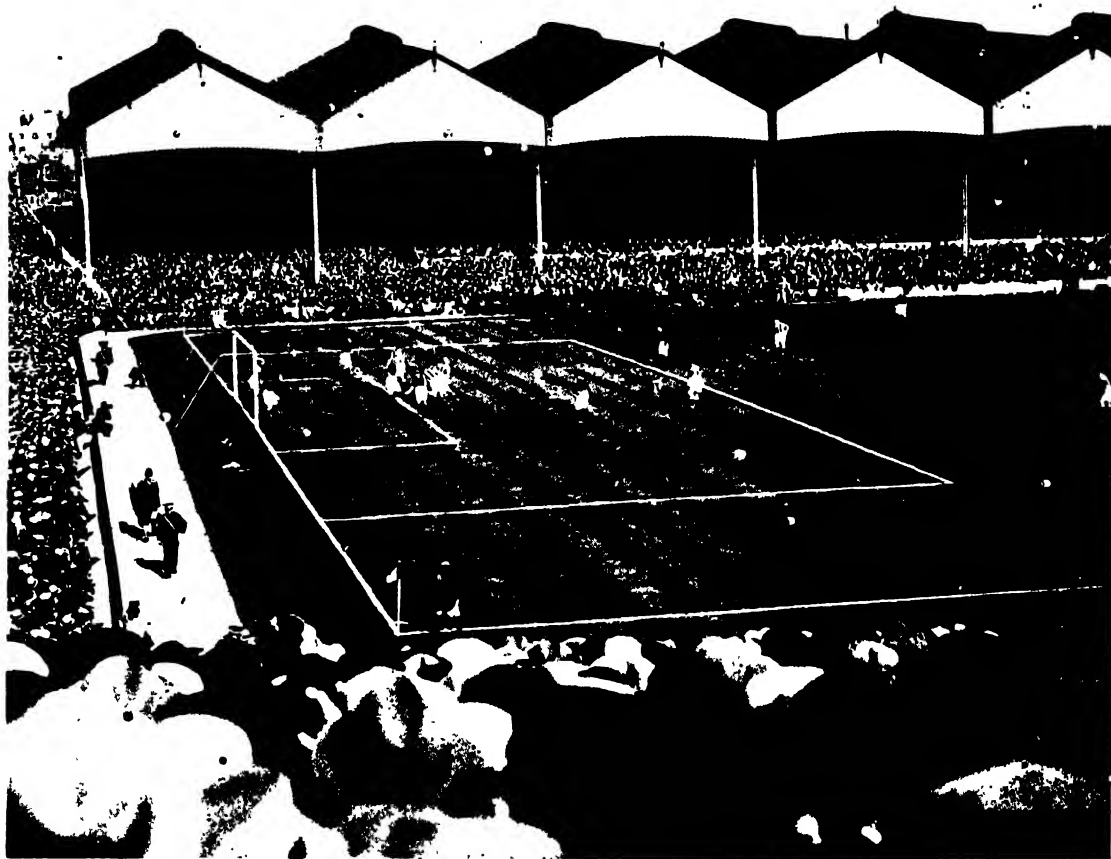
A LEAGUE MATCH IN PROGRESS AT HIGHBURY, 1931
Arsenal is playing West Bromwich. *Fox Photos*

Besides the English Leagues already mentioned, there are the Scottish League (usually in two divisions), the Irish League, the Welsh League, and, in England, the Midland, Southern, Central, Western, and North-Eastern Leagues, together with the post-war Football Combination. These English leagues contain elevens made up of both amateurs and professionals, and, taken as a whole, they are composed of the reserve teams of the eighty-eight League clubs with the first elevens of clubs not quite good enough to be in the Third Division. Amateur leagues are innumerable; among the best known are the Southern Amateur League, the Isthmian, the Northern, and the Athenian, while almost every city and town in the country has its District League. It is these minor amateur leagues that form the backbone of the game; they contain the vast majority of the players, and they are constantly providing the senior teams with a steady supply of talent.

At the beginning of each September hundreds of junior clubs set out hopefully on the long road to the Cup Final at Wembley in the following April. Few, if any, of these teams will ever get as far as the first round proper, because they first have to play in a knock-out competition right through the preliminary and qualifying rounds. But in the luck and glamour of the F.A. Cup Competition, there are usually one or two clubs each season who are destined to win temporary fame and fortune by a few surprise victories over supposedly superior opponents. Two preliminary and four qualifying rounds

are generally played in the months of September, October, and November; the majority of the Third Division clubs are given exemption until the first round proper in December, and then the forty-odd senior clubs join to make sixty-four clubs for the third round in January. The fourth, fifth, and sixth rounds follow before the semi-finals at the end of March and the Cup Final at Wembley in April.

This great national competition has obtained a wonderful hold on the imaginations of the people of our country. It is perfectly controlled and directed by the Football Association, and it is estimated that well over a million spectators would watch the Final Tie if a large enough stadium were available. In fact, with its hundred thousand carefully marshalled spectators, its community singing and massed bands, and the never-to-be-forgotten spectacle of the King and Queen presenting the Cup and medals to the twenty-two players, the Cup Final ranks with the DERBY, the GRAND NATIONAL, and the BOAT RACE (qq.v.) as one of the greatest sporting events of the year.

The English Schools Football Association organizes an annual Junior Trophy Competition through its 390 'Associations'. Out of the hundreds of teams which enter each year, the best thirty-two fight their way through to the competition proper. All the players must be under 15 years of age, and the rules of the games have been modified in certain ways: a size 4 ball is used, for instance, the height of the goal cross-bar is 7 feet instead of 8 feet, the duration of each half is 40 minutes instead of 45 minutes, and the size of the field may be reduced. As many football-playing schools receive special coaching by official F.A. coaches, the standard of play of these picked school teams is extremely high. Although many public schools have in recent years changed from Association Football to RUGBY FOOTBALL (q.v.), perhaps because of the increase of professionalism in soccer, several leading schools still remain faithful to the association game, and they reach a high level of play.

See also ASSOCIATION FOOTBALL; FOOTBALL POOLS.

ATHLETICS. The term 'athletics' means running on the flat or over obstacles, jumping, and hurling various standard objects. Almost all the important athletic meetings and championships are for amateurs, and the majority of the records have been achieved by amateurs. Professionals are not allowed to enter for any of these meetings, and if any amateur competes with professionals and for a money prize, he loses his amateur status. Athletes as they get older often become professionals, generally as instructors, for the sake of earning a living.

The Egyptians and neighbouring peoples cultivated sports many centuries B.C.; and the legendary date of the foundation of the Irish Games, the TAILTEAN (q.v.), is 1000 B.C. But, apart from modern times, the greatest period in the history of athletics was that of the ancient Greeks. The Greek Games, which were organized spectacles of the present-day type, had originally a religious aspect, and the four chief festivals, the OLYMPIC (q.v.), Isthmian, Nemean, and Pythian, were celebrated near sacred places in different parts of Greece. Athletics, BOXING, WRESTLING, and CHARIOT-RACING (qq.v.) were the principal items in the programme. The athletes, who underwent very long and thorough training, were trained to develop strength rather than agility: it is said that Milo, the most famous of professional athletes of ancient Greece, could kill a bull with one blow of his fist, and then eat the roasted carcase within 24 hours. Athletes of those days were what we should call professionals: although their prizes at the Games were only garlands of olive or laurel, they received handsome financial rewards from their State authorities.

The Greek Games flourished for centuries, and were imitated in other parts of the Mediterranean world. After the Roman conquest of Greece, Roman competitors were admitted as well as Greek, and from 186 B.C. similar sports were held at Rome under the encouragement of several Emperors. These GLADIATORIAL GAMES (q.v.), however, soon took on quite a different character. Under the early Christian Church the games were discouraged and finally put an end to, on account of their pagan associations. In the Middle Ages people attached greater importance to military than athletic exercises (see TOURNAMENTS), and the best runners were usually professional State couriers. Turkish messengers are said to have run regularly from Constantinople to Adrianople and back (220 miles) in 48 hours—a performance which compares well with the performance of the Hungarian Lovas in 1932, who ran from Budapest to Vienna (178 miles) by stages in a

GREEK ATHLETES RUNNING A RACE
Attic vase painting, Sixth Century B.C. *Metropolitan Museum, New York*

total time of 34 hrs. 45 min. Although athletics as a sport played a small part in national life, they were often a matter of local and personal interest. Henry VIII was a keen hammer-thrower, and foot-races were held in the 16th century at Chester and other places. There were small district meetings, after the style of the present-day HIGHLAND GAMES (q.v.) and the Cumberland Games held at Grasmere. Under the Puritans, however, in the 17th century, such meetings were discouraged.

The modern revival of athletics can be attributed to the growth of English public schools in the early 19th century. Headmasters, such as Arnold of Rugby, encouraged the sporting as well as the scholastic activities of their schools. The famous Rugby 'Crick Run', started in 1837, was the first regular modern athletic event. The interest thus fostered spread to the Universities, and eventually created a demand for organized events. In 1849 the Royal Military Academy, Woolwich, promoted a meeting of this kind; and since then the popularity of athletics as a sport and as a spectacle has continued to increase. Cambridge first held sports in 1857, Oxford in

1860, and the series of matches between the Universities began in 1864. The English athletic championships were instituted in 1866, and other countries soon followed this lead. In the Eastern States of America athletic meetings frequently took place.

The need was soon felt for a governing body to organize athletic sports on a national basis, and draw up rules of competition. The Amateur Athletics Association of Britain (known as the A.A.A.) was founded in 1880, and this body now controls all public athletic meetings at which amateurs compete. Towards the end of the 19th century several unofficial matches between teams of different nationalities had been arranged; but the meeting of Oxford and Yale Universities in 1894 is regarded as the first true international contest. Two years later there too place the first meeting of the new Olympic Games, for whose promotion France was largely responsible. These Games, though borrowing the old name, were quite different in character from the Greek Games. After the 1912 Olympics at Stockholm the promotion of regular international matches began. A series of triangular

A TROPICAL AQUARIUM

contest between England, Scotland, and Ireland was instituted in 1914, and though suspended from 1930 to 1946, was resumed later on. The organization has become more efficient, the training more scientific, and intensive competition has improved standards of performance. Women as well as men now take part in most of the events, and they took their place in the 1922 Olympics. Women's athletics are now under the control of the Fédération Sportive Féminine Internationale. The growing interest of British Universities was shown by the foundation in 1919 of the Universities' Athletic Union, which now promotes inter-university competitions in about ten different sports. In 1924 Ireland revived the institution of the Tailltean Games, with the idea of holding them in every Olympic year (one year in four).

Other European countries, the Dominions, and the United States all began to take an increasing interest in athletics. France created a State department of physical education which later became a Ministry, while the Scandinavian countries, despite the handicap of small populations, soon began to excel in the performance of field events and long-distance races (see MARATHON). Finnish and Swedish athletes have been particularly prominent.

Standards of performance in athletics have improved greatly during the last sixty years, particularly in 'field' events (the jumps, weight, hammer, javelin, and discus). At the 1896 Olympics, Garrett of U.S.A. won the discus with a throw of 95 ft. 7½ in.: Fitch of U.S.A. almost doubled this in June 1946 with a throw of 180 ft. 8¾ in. Britain as a whole has shown more interest in the track events than in the field events. The track 'middle distances' (from 440 yards to 1 mile) are the favourite events of British athletes. Since 1884 they have reduced the time for the mile from 4 min. 18·4 sec. to 4 min. 4·2 sec. Within recent years Sweden has developed a school of great milers, five of whom (Haegg, Andersson, Persson, Gustafsson, and Strand) have returned times better than 4 min. 5 sec. For many years athletes have hoped that the '4-minute' mile would soon be accomplished (see ATHLETICS, TRACK EVENTS).

The organization required to promote modern athletics is like a many-storied house. Controlling amateur athletics on a world basis is the International Amateur Athletic Federation, composed of representatives from national associations, such as the British A.A.A. and American A.A.U. The A.A.A. is subdivided into regional and special associations; the regions are based on county organizations; while local and private clubs form the foundation of the whole structure.

THE WATER JUMP AT A PUBLIC SCHOOLS ATHLETIC MEETING.   *Sport and General*

World-famous British clubs include the London Athletic Club, Polytechnic, Achilles, Milocarian, and Blackheath. The type of meeting promoted by the various associations corresponds to their status. Open British Championships are sponsored by the A.A.A., counties hold championships restricted to residents of their areas, while college and district clubs may arrange private or inter-club matches, such as the Polytechnic's Kinnaird Trophy meeting and Birchfield Harriers' Waddilove Cup match. A form of athletic competition especially popular in Britain is the handicap meeting, in which an athlete is given a start proportionate to his proved ability. This sort of meeting resembles the great professional competitions, the Powderhall handicaps at Edinburgh, and the Morpeth 'Olympics'. Before the Second World War, indoor athletic meetings were becoming popular, particularly in America, while outdoor meetings were also occasionally held at night under floodlights.

Junior athletics have been encouraged notably by the London Athletic Club, who in 1890 presented a challenge cup for a 440 yards race for schoolboys. This was followed in later years by the presentation of other cups. In 1897 the Public Schools Challenge Cup Meeting was established as a regular event, and in the 1930's foreign schools began to compete. Often competitions for junior athletes are the Junior A.A.A. Championships, open to competitors under 19 years old, and similar championships organized by the County A.A.s. Some of the performances put up by schoolboys are very good, sometimes as good as those in inter-university matches. A schoolboy in 1935 ran the 100 yards in 10·1 sec., and in 1936 the 120 yards hurdles (3 ft. 3 in.) in 15·2 sec. In 1939 the 440 yards was run in 50·2 secs—a better time than h⁓

List of Some Amateur World Records
(ratified up to 1948)

Event	Holder	Nationality	Date	Time
100 yds.	F. C. Wykoff	U.S.A.	1930	9·4 sec.
,,	D. J. Joubert	S. Africa	1931	,,
,,	J. C. Owens	U.S.A.	1935	,,
,,	C. Jeffrey	U.S.A.	1940	,,
220 yds.	J. C. Owens	U.S.A.	1935	20·3 sec.
440 yds.	H. McKenley	Jamaica	1946	46·2 sec.
880 yds.	S. C. Wooderson	G.B.	1938	1 min. 49·2 sec.
1 mile	G. Haegg	Sweden	1945	4 min. 1·4 sec.
2 miles	G. Haegg	Sweden	1944	8 min. 42·8 sec.
3 miles	G. Haegg	Sweden	1942	13 min. 32·4 sec.
6 miles	V. Heino	Finland	1944	28 min. 38·6 sec.
10 miles	V. Heino	Finland	1946	49 min. 22·2 sec.
15 miles	E. Tamila	Finland	1937	1 hr. 19 min. 48·6 sec.
Marathon	K. Son	Japan	1936	2 hrs. 29 min. 19·2 sec.
120 yds. Hurdles	F. G. Towns	U.S.A.	1936	13·7 sec.
,, ,,	F. Wolcott	U.S.A.	1941	,,
440 yds. Hurdles	R. V. Cochran	U.S.A.	1942	52·2 sec.
2 miles Walking	V. Hardino	Sweden	1945	12 min. 45 sec.
30 miles Walking	F. Cornet	France	1942	4 hr. 24 min. 51·2 sec.
4 × 110 yds. Relay Race		U.S.A.	1938	40·5 sec.
4 × 440 yds. ,, ,,		U.S.A.	1941	3 min. 9·4 sec.
4 × 880 yds. ,, ,,		Sweden	1947	7 min. 29·6 sec.
4 × 1 mile ,, ,,		Sweden	1948	16 min. 55·8 sec.
				Distance
High Jump	L. Steers	U.S.A.	1941	6 ft. 11 in.
Long Jump	J. C. Owens	U.S.A.	1935	26 ft. 8¼ in.
Pole Vault	C. Warmerdam	U.S.A.	1942	15 ft. 7¾ in.
Hop, Step, Jump	N. Tajima	Japan	1936	52 ft. 5⅞ in.
Weight	J. Torrance	U.S.A.	1934	57 ft. 1 in.
Hammer	E. Blask	Germany	1938	193 ft. 6⅞ in.
Javelin	Y. Nikkanen	Finland	1938	258 ft. 2⅞ in.
Discus	R. E. Fitch	U.S.A.	1946	180 ft. 2⅞ in.

See also ATHLETICS, FIELD EVENTS; ATHLETICS, TRACK EVENTS, CROSS-COUNTRY RACES; RELAY RACES.

...een returned for many Oxford and Cambridge matches..

ATHLETICS, FIELD EVENTS. 1. This department of athletic sports includes the Long and High Jumps, the Hop, Step, and Jump, Pole Vaulting, Putting the Weight, and Throwing the Discus, the Javelin, and the Hammer. As a whole this branch of athletics has been much neglected in Great Britain in favour of the track events. This is one reason why Great Britain does not do very well at the Olympic Games and in matches against foreign countries. Field events are on the whole more difficult to master than flat events, and repay good instruction. This was demonstrated by Bedford School, which, after being coached for a period of 22 years by a man who really did understand field events technique, won eight times the Public Schools Athletic Challenge Cup, which no other school had held more than twice.

2. The High Jump. The antiquated 'scissors style' of jumping, still in vogue in Great Britain, contravenes the fundamental principle of high jumping, which is that all heavy parts of the body must be at the level of the centre of gravity at the instant of clearing the bar. (In describing the now orthodox styles it is assumed that the athlete makes his spring from the right foot.)

The Eastern Style was evolved in 1884 by an Irish-American, Mike Sweeney, and using it he made a world's record of 6 ft. 5⅝ in. The athlete starts from a point at right angles to the cross-bar, which he approaches with an easy eight-stride run at increasing speed. On the last two strides he 'settles' for his spring and swerves slightly to his right. He springs from his right foot and swings his left as high as possible, still turning to his right in the air, and leaning to the right. When his hips are above the level of the cross-bar, he kicks his right leg back under his left and across the bar, throws up his arms, and lands in the pit on his right foot, from which he took off.

The Western Style was accidentally discovered by George Horine, U.S.A. He improved in a week from 5 ft. to 6 ft., and within a year to 6 ft. 7 in. With it, the late C. Johnson, an American negro, who cleared 6 ft. 5⅝ in. at 16 years of age, equalled the then world's record of 6 ft. 9¾ in. The approach is made from the right by eight easy strides at increasing speed. The left (outside) leg is kicked up. The left foot and


THE HIGH JUMP
Sport and General

right arm are carried across the bar, the right leg is then snapped up, and the athlete, lying flat on his right side and parallel to the bar, drops his right hand towards the pit, and rolls over the bar, to land on his right foot and hands in the sand-pit.

The Straddle Style is the easiest and the most economical style, and with it D. Albritton, another America negro, tied with Johnson for the world's record. The approach is the same as for the Western Style, but the take-off is closer in, and is from the heel and the ball together. The left leg goes across the bar in a step-over action, which brings the jumper face downwards above the bar, which is in line below his body. He clears his hips with a back-heeling upward kick of his right foot.

3. The Long Jump and the Hop, Step, and Jump. The approach to the take-off board in both these events begins about 100 feet back from the board. The run must be made at increasing speed, reaching its maximum when the jumping foot hits the board. In the long jump the body must be right over the foot at the take-off. It is impossible to jump any distance without jumping high: no one has even jumped as far as 25 feet without using the running-in-the-air action. The body is kept upright until the jumper swings back the arms and shoots out the legs for the landing, and then swings his arms forward to carry his body past the point where his heels hit the ground.

In, the Hop, Step, and Jump event the Hop is made from the right foot to the right foot, the Step is a giant stride, and the Jump is just an ordinary long jump from the left foot.

4. THE POLE VAULT. In this event the jumper vaults a height with the aid of a bamboo pole. The jumper who takes off from his right foot stands at the start of the approach run, with the pole parallel to the ground at his left side. His left hand is level with his hip and has an under-grasp. His right hand has an overgrasp, and his forearm lies across his body at waist-level. The run-up is from 50 to 70 feet, and must be so evenly made at increasing speed that the vaulter can hit the take-off mark with his right foot every time. The take-off should be about 9 feet back from the edge of the landing-pit. Four strides from the mark the point of the pole is lowered and jabbed into the slide-way, so that the hands come together above the head as contact is made with the stop-board by the point of the pole; the take-off mark is now directly below the hand-hold on the pole. The vaulter then swings forward until his hips are past the pole. He raises his feet towards the cross-bar, carries the right leg inwards above the left and towards the pole, and, as he turns, begins to pull on the pole with his hands. When his feet are higher than his hips and above the bar, he is in a face-downward position. He then
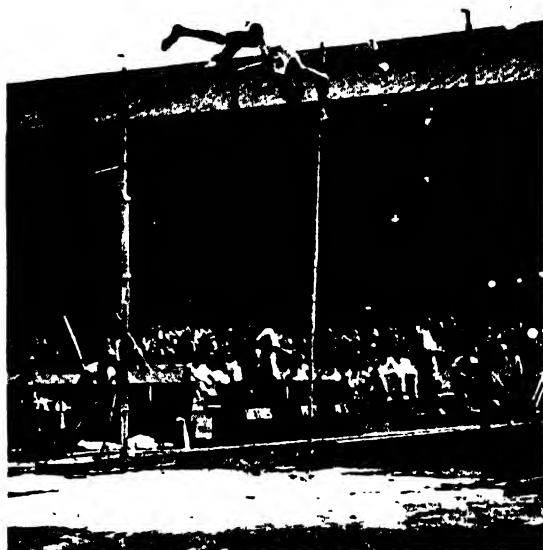
THE POLE VAULT
Picture Post

pushes up to a hand-stand, and, after clearing his upper body away from the bar, drops his legs and throws up his hands.

5. HEAVY-WEIGHT EVENTS. In all the 'heavy-weight' events now to be described the main thing is to secure a good 'set' position for the actual delivery. In throwing the discus this position is reached by a whirl within a circle of 8 ft. 2¼ in.; in putting the shot (or weight), at the end of a glide across a 7-foot circle; and in the javelin, after an approach run of unlimited length.

Putting the Shot. The athlete takes up his position at the back of the circle with the shot (which weighs 12 lb.) resting on his right hand. He swings his left leg up, back, and forward to gain momentum, and hops on his right foot to about the centre of the circle. In the hop his right foot passes close to the ground and lands an instant ahead of the left, which he puts down at 20 degrees to the left of the line of direction. During the hop the trunk is bent to the right, and the knees 'give' on landing, so that the athlete is in a crouch in the 'set' position, which is the beginning of the putt. The shot is put over the head—not on a line beside the face—and the right leg and arm make the delivery.

The Discus Throw. After swinging the discus (weighing 3.3 lb.) backwards and forwards across the body, supported on the palm of the right

THE LONG JUMP
Olympic Photo Association

hand, the thrower falls to the left into a turn, and spinning on his left foot through half a circle, puts his right foot down in the centre of the ring. Then he spins through a further half circle on the right foot and, putting down his left, is in the 'set' position, as described for the shot putter. During the whirl the discus is kept well back. The throw is started by a pull on the discus with a twist of the trunk from right to left, a right leg drive, and a right arm throw, which is much increased in the last 4 feet of the swing. The forefinger provides the final impulse.

The Javelin Throw. The approach run is made at increasing speed with the javelin (7 ft. 2 in. long and weighing 21·6 oz.) carried above the right shoulder with its point slanting downwards. The 'set' position is about the length of a javelin behind the scratch line. The last 20 feet of the approach are covered in three bounding strides, during which the javelin is brought down, forward, and back (but never to the full length of the arm). This brings the thrower to the cross-overstep which secures the 'set' position. The javelin is brought behind

THROWING THE JAVELIN
Sport and General

and over the shoulder by turning the right hand to a palm-upwards position, with the elbow leading when the throw is made.

See also ATHLETICS; HIGHLAND GAMES.

ATHLETICS, TRACK EVENTS. 1. These include all the running races except CROSS-COUNTRY RACES (q.v.). There are the sprint races, the 100 yards, the 220 yards, and the quarter-mile; there are the middle-distance races, the half-mile and mile; and the long-distance races including endurance tests such as the MARATHON (q.v.). Then there are the hurdle races of 120 yards and 440 yards over hurdles of different heights; the RELAY RACES, and WALKING RACES (qq.v.). As a rule sprinters are of a compact, strongly built physique; long-distance runners are spare and of medium height; while hurdlers are tall and long-legged. There have been cases, however, of outstanding athletes who have held world records in several events. J. C. Owens, the American Negro athlete, known in his own country as 'Black Lightning', in 1935 reached the world's record in the 100 yards, the 220 yards, the 220 yards low hurdles, and also the long jump. The Finnish runner, Nurmi, broke records in races ranging from 1 mile to 10 miles, and Gundar Haegg, the Swede,

THROWING THE DISCUS
Olympic Photo Association

nicknamed Gundar the Wonder, had nearly as wide a range. A. G. K. Brown started at school as a cross-country runner, and gradually came down the distance scale until he was showing his best form in the sprint races.

Training for competition running is a gradual building-up process. It depends on a basis of a sound, body-building diet, and very regular hours of sleep, together with an abstention from such habits as smoking or drinking, which may weaken stamina. During the training period the athlete works through a schedule designed to build up his strength and perfect his technique, and he never undertakes any undue exertion before he is ready for it. He always does a good deal of 'warming up' before any vigorous activity; this may consist of a few laps' ambling run round the track and some gentle exercises to loosen the muscles and tune up the body. Even when fully trained a runner always goes through the warming-up exercises to protect himself from the danger of tearing or pulling a muscle.

2. STARTING. The start is an important part of all races, and especially important in the sprints. Until 1887 every race began from a standing position; but in that year C. H. Sherrill tried a crouching position, which he found helped him to react much more quickly to the starting-gun. This position is now favoured by runners of all distances up to 880 yards. In a crouch start the runner coils his body like a spring ready for instant release, helping the process by digging holes so that his

foot can give his body a good push off. On the 'Get to your marks' order the runner should take up roughly this position: hands on the starting-line at shoulder width, left foot about 6 inches back from the line, right knee resting on the ground on a level with the left instep and comfortably close to it. (Some left-handed runners prefer to reverse this order.) Both legs and body must be parallel to the direction of running. On the next order, 'Get set', the body is moved forward so that its weight is taken by the hands, and the right knee lifted until the back is parallel to the ground. The arms must be straight, the eyes fixed on the spot where the first stride will hit the track, and the body remaining balanced until the gun goes off. When the report is heard the body is pushed and pulled forward with the right and left legs simultaneously, and the impetus is increased with a powerful shoulder drive of the arms. With the knees well up, the runner takes short strides at first until balance and speed have been gained. Some sprinters prefer the 'Bullet' start to the more orthodox crouch position. In this, both feet are placed close together, the front foot being about 18 inches back from the starting-line.

3. SPRINTING. To run the shorter distances an athlete requires not only strength but power of concentration. He must be able to react quickly to the gun (otherwise a vital half-second may be lost on the start), and he must pick up speed rapidly by a short, snappy action. Over the

HALF-MILE RACE AT THE GATHERING OF THE BRAEMAR ROYAL HIGHLAND SOCIETY, SCOTLAND, 1947
Sport and General
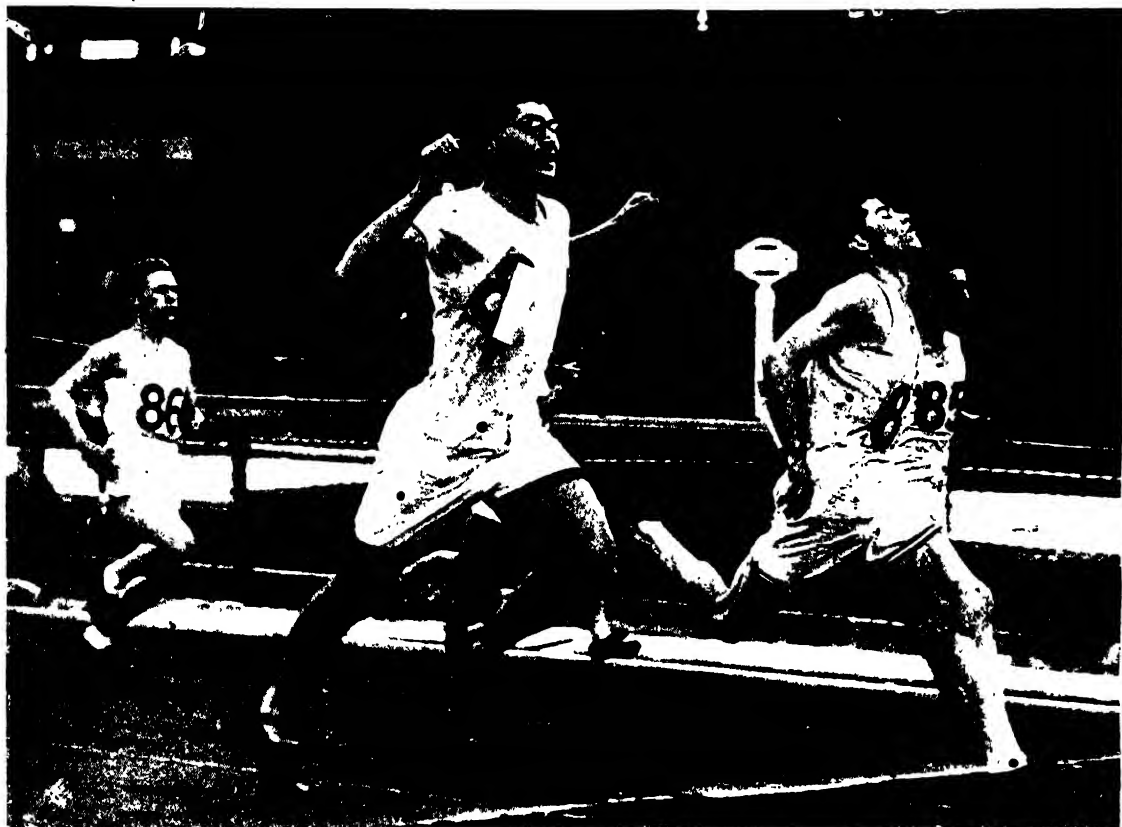
THE FINISH OF THE 100 YARDS RACE
The London Athletic Club Schools Challenge Cup Meeting, White City, London, 1949.   *Sport and General*

first 25 yards the sprinter works up from the starting to the running angle (a slight inclination of the body towards the finish) and gets into his stride. Length of stride is not so important in a sprint as frequency of stride. Head and torso should be carried naturally (any strain wastes energy), arms should drive the body like pistons, and knees should be well picked up so that the ball of the foot strikes the track, and arms, legs, and torso should move steadily, almost in parallel planes. A sprinter will sometimes examine the footprints left on the track to see that they have been in firm, straight lines, with no wasteful wobbling or wavering. The experienced runner keeps up his speed right over the finishing-line to a point 5 or 10 yards beyond the post.

4. QUARTER-MILE. This race, perhaps, puts the greatest strain of any race upon the runner. It used to be thought of as a middle-distance race, but it has now come to be regarded almost as a long sprint—though, in fact, full speed cannot be maintained the whole time. There are two ways of covering the distance. The first is favoured by the short-striding sprinter, who depends on tactics as much as running ability to win his race. He runs the first 80 to 100 yards flat out, so as to establish a lead; then he drops into a coasting stride for the next 250 yards, and then jumps into a burst of speed for the finish. The other method is to run the whole distance at a fairly even pace, about seven-eighths of a full sprint: this avoids the excessive expenditure of energy caused by alteration of pace, and produces a stronger finish. This method is best suited to runners with a long, easy stride, and it will be noticed that most great quarter-milers are such runners.

5. MIDDLE DISTANCES (Half-mile and mile). Although some distance men still believe that

CLEARING THE HIGH HURDLES DURING A 120 YDS. RACE BETWEEN OXFORD AND CAMBRIDGE AT OXFORD, 1915
*Sport and General*

an athlete should only run fast enough in a race to beat his opponents, Nurmi's theory of running at an even pace in order to return a pre-calculated time now finds general acceptance. The principle behind the theory is that it is less expensive of energy for a runner to maintain an established pace than to alter it up or down — just as a motor-car engine consumes a lower average of petrol on a long, steady run than when it is constantly being started and gears are being changed. Nurmi carried a watch when running, and attempted to conform to a previously calculated schedule of lap-times. His ideal was to run the mile in four 62-second quarters making a total of 4 min. 8 sec. He never quite achieved this, but it was achieved later, and bettered, by Haegg the Swede. The good distance runner has an easy action, carrying the arms low with a slight swing across the body, the head poised, and the legs reaching out for their stride. Success in these races partly depends on running tactics—ability to decide when and how to pass an opponent, and when to prevent an opponent from passing. Many prizes have been lost through ill-judged bursts or premature finishing sprints which exhaust the runner's strength.

6. LONG DISTANCES. As in middle distances, the keynote of success in long-distance racing is the maintenance of an even pace which will allow the runner to conserve the maximum of energy and move with the utmost economy of effort. Flailing arms and legs, which exhaust an athlete in the quarter-mile, do so even more in the Marathon, an endurance test of 26 miles 375 yards. To build up the perfect fitness and staying power necessary for long-distance racing, runners need a long period of hard training on the track and on the road, together with some speed work to prevent their becoming set in a jog-trot style.

7. HURDLES. To hurdle successfully a man needs to combine jumping ability with sprinting power, spring and suppleness of leg and flexibility

of body being essential. It takes long practice to acquire a satisfactory technique and to achieve a smooth, rhythmic style of taking the hurdles successively. There are three principal hurdle races, all of ten flights each: the 120 yards High (3 ft. 6 in. hurdles), the 220 yards Low (2 ft. 6 in.) and the 440 yards Intermediate (3 ft.). The technique for each race varies, but can be stated generally as follows: the hurdler approaches at a sprint, and at the take-off point picks up the knee of the leading leg (usually the left) to begin a long stride aimed over the hurdle. At the same time the trunk bends forward from the hips, balanced by the arms, and the rear leg is brought up squarely so as to trail over the hurdle. The hurdler's object is to clear his fences with the smallest possible margin, since an exaggerated leap wastes energy and throws him out of his stride. In the High Hurdles eight strides are customary to the first take-off and three between the hurdles. The essence of hurdling is rhythm, a good idea of which can be got by studying action films of champion hurdlers in slow motion.
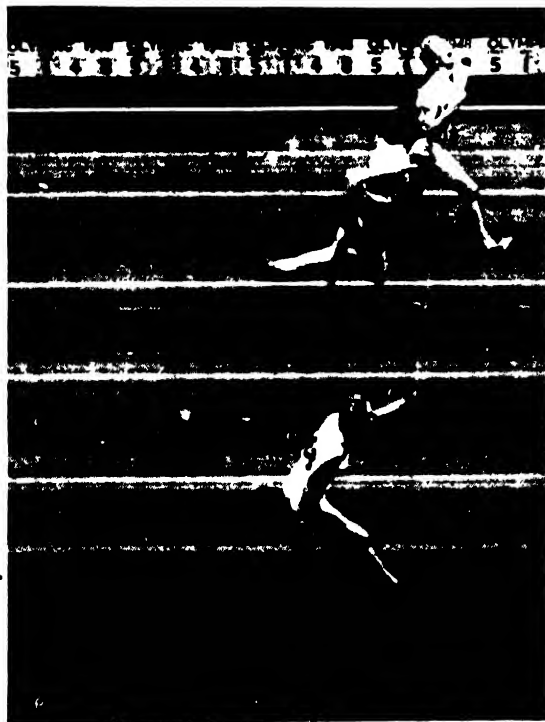
A PHOTO-FINISH IN THE 80 METRES WOMEN'S HURDLES FINAL
AT THE OLYMPIC GAMES, 1948
The winner is F. Blankers-Koen   *Olympic Photo Association*

8. WOMEN'S RACING. Of recent years women also have been taking part in many of the track events. In the Olympic meeting of 1922 women's events were included for the first time. In the 100 yards race, women's record speed, achieved by a Dutch runner, F. Blankers-Koen, is 10·8 sec. against a man's 9·4 sec.; and in the half-mile, the record speed is 2 min. 19·7 sec. against a man's 1 min. 49·2 sec.

See also ATHLETICS; RELAY RACES; CROSS-COUNTRY RACES.

AUTOGRAPH COLLECTING. This phrase has two different accepted meanings. The familiar one is the collection of signatures; and most people at some time of their lives have had an autograph album with the signatures of their friends, preceded by some favourite motto or quotation or original writing or drawing. The devotees of some branch of art or sport have zealously acquired the signatures of their favourite film-stars or football heroes, or of an admired singer.

But, in the more technical sense, autograph collecting is the collecting of documents in the handwriting of their authors. The fervent autograph collectors who attend the great book sales pay large prices for the autograph letters, manuscripts, or documents of the great authors, artists, and scholars of the past or the present. Particularly valuable items are those in which an author discusses his work or quotes from it. An example of this is the autograph letter of the poet Clough, written to William Allingham, of 13 October 1849, in which he has written out his now-famous poem, which begins: 'Say not, the struggle nought availeth.' In 1941 Mr. Churchill, in a broadcast to America had quoted from this poem the line: 'But westward, look, the land is bright.' In June of that year this autograph letter was auctioned at Sotheby's. It was bought by the American publisher, Mr. Charles Scribner, for £75, and presented to Mr. Churchill.

In America there is great competition to own a complete set of 'Signers'—autographs of all the men who signed the Declaration of Independence. Only forty signatures of one of the men—Button Gwinnett—are known to exist, and this fact has given such scarcity value to his signatures that one is now worth over £10,000.

B

BACCARAT, *see* CASINOS.

BACKGAMMON is one of the oldest of the DICE games (q.v.). The name, from the Anglo-Saxon *bac* (back) and *gamen* (game) arises from the fact that at some points in the game pieces are taken up and obliged to go back to their starting-place. The game was familiar to the legionaries of ancient Rome, who called it the 'Twelve-line Game', and are said to have learned it from the Greeks. It was played in England in the 14th century under the name of 'Tables', and is mentioned by Chaucer.

A backgammon board has two equal compartments, hinged together, and forming an oblong box when closed. The division down the middle is called the 'bar'. The board consists of four parts, called 'tables', each marked with six 'points' alternately coloured black and white, on which the 'men' are placed. There are fifteen black and fifteen white men, arranged for the start of the game as shown in the diagram. The two inner or 'home'

A BACKGAMMON BOARD

tables are on the right, White's at the top, Black's at the bottom, and the two outer tables on the left. White moves his men in a clockwise direction towards his own home table, Black in the opposite direction.
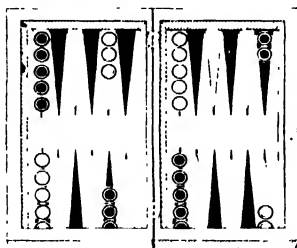
The object of each player is to get all his men into his own inner table, and then, one by one, off the board. Two dice are used, the players taking it in turns to throw. After a throw, the player calls the numbers shown, giving the highest first. The numbers from 1 to 6 are known as ace (1), deuce (2), trois (3), quatre (4), cinque (5), and six (6)—from the French words. The ordinary English names, however, are generally used. The player is entitled to move one man forward for each number (he may move the same man twice if he wishes). A 'doublet' (the same number on both dice) entitles the player to play the throw twice over—if he throws two 6's, for instance, he may move forward to a total of 24 points. He cannot move to a point which is occupied by two or more of his opponent's men. A player, therefore, tries to get two men on to the same point, when he is said to have 'made' the point, for the men are secure from capture, and the progress of the enemy is blocked at that point. A single man on a point is called a 'blot' and is a danger point, for if the enemy lands on that point, this man is 'taken up' (placed on the 'bar' between the tables) and must begin its journey all over again. The player must bring it back on to the board before he can move any other men. Early in the game this is easy, but later, when the inner table is getting filled with the opponent's men, he may miss several turns before he throws the exact number corresponding to a vacant place, or better still, a blot in his enemy's lines.

As soon as one player has got all his men into his home table, he proceeds to 'bear them off' (i.e. remove them from the board). But as he can only move his men the exact number of points which corresponds to his throw, he may have to waste a certain number of throws before they are all off. For instance, if he is left with two men on the quatre point, any throws of six or cinque are useless to him. In some versions of the game, however, he would be entitled to bear off men in these circumstances from the highest occupied point.

Backgammon is a GAMBLING GAME (q v.) played for money or chips. The winner is the player who first succeeds in removing all his men from the board, but the value of his win depends on the stage his opponent has reached by the end of the game. If the loser has got all his men into his own inner table and has begun to 'bear off', the winner's game is called 'a hit', and the loser pays the agreed stake. If the loser has not yet begun to bear off, the game is known as a 'gammon', and the loser, who is said to be 'gammoned', pays double the stake. If the loser still has a man up on the bar or in his opponent's inner table, the game is a 'backgammon', and

A GAME OF BACKGAMMON
Painting by David Teniers the younger (1610–90). *National Gallery*

the loser pays three or four times (as agreed) the amount of the stake.
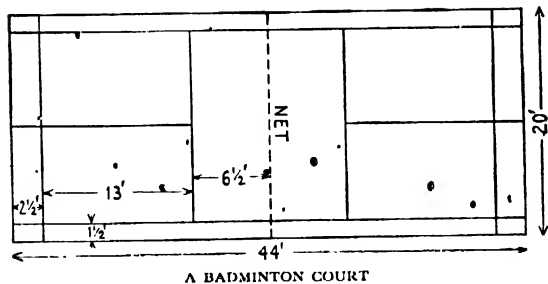
See also BOARD GAMES.

BADGER HUNTING, *see* HUNTING, HISTORY OF.

BADMINTON. The game is played over a high net with a very light, long-handled racket and a shuttlecock. It can be played either indoors or out: when played out of doors a woolly ball is sometimes used, as being less affected by the wind than the shuttlecock. Only the indoor game with the regulation shuttlecock, or 'bird', is officially recognized. Although badminton is probably derived from the same parent-game as battledore and shuttlecock, it is not in any way to be compared with it. Badminton is an extremely fast game, requiring great skill, and providing excellent exercise for its two or four players.

The game originated in India several hundred years ago, and was brought to England in 1873. It became popular at Badminton, the seat of the Duke of Beaufort in south Gloucestershire, and so gained its English name. The Badminton Association of England in 1893 drew up the official rules, which were based on those in force in India. In 1899 and 1900 respectively the national doubles and singles championships were started.

Badminton is played on a court marked as shown in the diagram. The shuttlecock is served diagonally as in lawn tennis, and remains in play so long as it is kept within the court and does not touch the ground. If the server wins the rally, he scores one point: if he loses, the next player serves. Only the serving side can score. The game is won by the side first making 15 points. Three games make a set. A skilful player controls his shots so that he knows just where the shuttle will go, and can in consequence vary the length of his shots, gradually weakening his opponent's returns until he gets a chance to 'kill' or to return a 'drop-shot'. The kill, the most usual attacking shot, can only be played when the shuttle is higher than net-level. Body, shoulder, elbow, and wrist should strike together to bring the shuttle down to the ground

A BADMINTON COURT

BAGATELLE, see BILLIARDS, Section 4.

BAGPIPES. The bagpipe was known to the ancient civilizations of the Near East, and it is mentioned in the Old Testament. It may have been introduced into Britain by the Romans. Carvings of bagpipe players on churches and references in the works of Chaucer and other writers show that it was popular all over the country in the Middle Ages. Now it is confined almost entirely to the northern counties of England, to Ireland, and to Scotland where it was introduced much later. Bagpipes have been used in most European countries, and the instrument is also native to India and China.

In Scotland the bagpipe is first recorded in the 15th century during the reign of James I, who was an accomplished player, and probably did much to make it popular. For long it has been considered a national Scottish instrument. The sound of the bagpipes is very stirring. The old Highland Clans and later the Highland

on the other side of the net as steeply and fast as possible. The drop-shot, a difficult but extremely effective stroke, just lifts the shuttle over the net to drop, for perfection, touching the net the other side. Unless very accurately placed, it fails to clear the net or offers the opportunity for a kill to the other side. The 'lob' is the usual defensive shot, played when the shuttle is below net-level. It is a bad shot unless it reaches nearly the back line; otherwise, being above net-level, it is 'killable'.

A PARADE OF PIPERS AT THE ABOYNE GAMES
Sport and General

Regiments used to go into battle to the sound of the pipes.

The bagpipe consists of a reed pipe, the 'chanter', and a wind bag which provides a regular supply of air to the pipe. The wind pipe is filled either from the mouth or by a bellows which the player works with his arm. The chanter has a number of holes or keys by means of which the tune is played (*see* WIND INSTRUMENTS). In addition to the chanter there are often three or four other pipes called 'drones', which sound simultaneously but are capable of playing only one note each.

The English or Northumbrian bagpipe is bellows-filled and usually has four drones, tuned to G and D. All the pipes are stopped at the ends and produce a soft tone suitable for indoor performance. Refinements affecting range and tone quality are still being added, and with a special tuning device it is possible to play in several keys.

In Scotland there are two types of bagpipe. The Highland pipe is mouth-filled and has three drones, all open at the ends. Its range is one octave with an extra note (G to A), and its key is almost A major. G natural is used instead of G sharp, and C and F are not true sharps but something between a sharp and a natural. The drones are usually tuned to a D and two A's. The Lowland pipe is similar in most respects, but is bellows-filled. In Ireland there are also two forms of pipe, very similar to the Scottish ones.

See also HIGHLAND GAMES.

BALALAIKA, *see* LUTES AND GUITARS.

BALLET. Ballet is the interpretation of a dramatic or musical theme by means of formal dancing. It is a composite art, made up of dancing, music, painting, and drama.

The dancing comes out of a fixed technique, which is the basis of the ballet dancer's training, though many present-day ballets do not make obvious use of ballet technique. It is in the classical ballets, such as *The Swan Lake*, *The Sleeping Beauty*, and *Coppelia*, that the technique is the most in evidence.

In theory all music is suitable for dancing, but in practice this is not so: the ideal music for a ballet is that which is specially written for the purpose, such as Tchaikowsky's music for *The Swan Lake* and *The Sleeping Beauty*; or that

A MODERN PERFORMANCE OF 'GISELLE'
The ballerina, Margot Fonteyn, is partnered by Robert Helpmann. *J. W. Debenham*

which is arranged by a skilled hand, such as Chopin's music for *Les Sylphides*, or Meyerbeer's music for *Les Patineurs* arranged by Constant Lambert. The perfect ballet music is not merely a rhythmical accompaniment, but plays an essential part in conveying the atmosphere and mood of the story (*see* BALLET MUSIC: Vol. XII).

Costume must be regarded as a physical part of the dancer in motion, and its influence on technique has been enormous. Costume and scenery are not merely decorative embellishments, but are an essential part of the whole, an equal partner in the ballet.

The word drama needs a wide interpretation. It can imply the telling of a positive story, such as the well-known fairy-story of *The Sleeping Beauty*, or the tragic story of a puppet in *Petrouchka*; the creating of an atmosphere, such as that of a sylph-haunted wood in *Les Sylphides*; or the attempt to show in motion the mood of the composer, as in *Symphonic Variations*. In the classical ballets the dancer uses conventional miming gestures to tell his story, while in the

later ballets the miming is much less conventional and more a part of the movement of the dance.

The choreographer is the person who designs the dance. He builds up his ballet on a theme drawn, perhaps, from some great musical work or painting, such as Hogarth's *Rake's Progress*, or work of literature, such as *Hamlet*, or from some idea or mood born in his own mind. The perfect ballet is one in which composer, choreographer, and painter have each in his own medium united to express the same idea.

Ballet is a modern art only in technique, for the practice of telling a story in dance is by no means new. The peoples of most ancient civilizations used dance to express their religious ideas, and dancing was an integral part of the performance of drama in ancient Greece. Even to-day very ancient dances which tell a story by means of highly formalized movement are found in the far east. Ballet is closely connected with such forms of the drama as MIME and MASQUE (qq.v.).

Ballet arose directly from a kind of masque brought from Italy to France in the 16th century, where it became very popular at court. This spectacle at first included dancing, singing, and the declamation of poetry, but these became more and more subordinate in the later ballets, as, for instance, in *Le Ballet Comique de la Reyne*, which was performed in 1581 to celebrate a royal wedding. Ladies took part in this, forming what was the first 'corps de ballet'; but in general, dancing was regarded as a male prerogative and remained so until the reign of Louis XIV. Under this great patron of dancing, however, all the court took part in elaborate ballets, the king himself playing leading roles. Technique was limited by the long robes of the ladies who, unable to make any movement off the ground, could only move in geometrical patterns, their dance influenced by the graceful pavans and minuets of the ballroom (*see* BALLROOM-DANCING).

At this stage ballet was still mainly a social accomplishment. There were professional

A SCENE FROM 'THE SWAN LAKE'
A performance by the Sadler's Wells Ballet with Robert Helpmann as Prince Siegfried and Alicia Markova as Odette
J. W. Debenham

LA CAMARGO
Painting by Nicolas Lancret (1690–1743). *Wallace Collection, London*

dancers, of course—the court dancing-masters as well as the gypsies, tumblers, and acrobats who entertained at the fairs. Ballet-dancing did not become a profession, however, until 1661, when Louis XIV, his own dancing days at an end, founded 'L'Académie Nationale de la Danse', introducing professional dancers and extending the scope of ballet by removing it from the court to the theatre.

The dancing steps used at this time were based upon the five positions taught by the Italian dancing-masters—and these are still the basis of ballet technique. FOLK-DANCING (q.v.) as well as ballroom-dancing began to have its influence on ballet; but its technique was still limited by the facts that the dancers always wore masks and used pulleys and levers to raise themselves off the ground because of their long, heavy costumes. In 1730 a great technical advance was made when the dancer

La Camargo danced in a skirt which revealed her ankles. At once the legs and feet became important, and what is called *la danse en l'air* came into being. The dancer could jump and beat her feet together (*batterie*). Shortly after the French Revolution still greater freedom was given when Monsieur Maillot, costumier of the Paris Opéra, introduced tights, which left the whole body free.

In 1760 Jean Jacques Noverre in his *Lettres de la Danse* insisted that ballet was a form of drama and needed greater freedom of technique. Dancers in his company at Stuttgart discarded the mask, so that they could make use of facial expression, and also they launched and made popular the *pirouette*, a complete turn of the body made on one toe. Following Noverre came the Italian Carlo Blasis (1803–78), who was especially interested in the connexion between ballet and the arts of painting and sculpture.

He founded the Academy of Dancing at Milan, and his system, described in his *Treatise on the Art of Dancing*, is the basis of modern ballet technique.

From about the 1830's the Romantic Movement—a movement towards the emotional and the imaginative—had a 'strong influence on ballet, which became less spectacular and more dramatic—for it was used to express poetic ideas. Through the artistry of Taglioni, the female dancer (the *prima ballerina*) became so popular that the male dancer (the *premier danseur*) lost his position, and the balance of ballet was upset until the advent of Diaghileff with Fokine and Nijinsky. Marie Taglioni was the first great ballerina, and *La Sylphide*, created specially for her, was the first Romantic Ballet. Her style was light and fairy-like, and she used the tips of the toes (*les pointes*) to suggest flight—an important advance in technique. In *La Sylphide* she wore a long white tarlatan skirt, which became a convention of Romantic Ballet. *Giselle*, which was created for the dancer Carlotta Grisi by the French poet Théophile Gautier, is the only Romantic Ballet to survive to the present day, though *La Sylphide* and a few others have been occasionally revived. Romanticism in ballet was highly artificial and upset the balance of the dance by idolizing the ballerina so much that the premier danseur became a mere lifter. In consequence, serious ballet in western Europe almost died out, the *corps de ballet* of the Paris Opéra becoming little better than a dancing chorus, and ballet in London becoming little more than a popular feature of the Music Hall (q.v.).

Russia brought a renaissance to Europe. There, ballet, encouraged at the court, had flourished under foreign teachers, deriving strength from the very vigorous national dances of the people. The nobles encouraged dancing and sometimes formed private ballet companies from their serfs. Some of these troupes were absorbed by the great ballet companies at Moscow and St. Petersburg. Under such foreign teachers as Marius Petipa, a Frenchman, Johannsen, a Dane, and later Cecchetti, an Italian, the Russians absorbed the best from both the French and Italian schools. Petipa, in charge of the St. Petersburg Ballet for over 50 years, created such great ballets as *The Swan Lake* and *The Sleeping Beauty*, built up from familiar fairy-stories. The music for these was specially composed by Tchaikowski (q.v. Vol. V), the first great composer of that period to write specially for the ballet. In these Classical Ballets the dancers wore the short skirt or *tutu*, which leaves the legs entirely free—a great change from the time of Louis XIV when even the feet were not seen. But the Russian Ballet would also have become stereotyped and consequently have declined had not new life come from outside. Isadora Duncan, an American dancer from outside the ballet tradition, came to Russia in 1907, bringing a type of dance devised from a study of Grecian art (*see* Greek Dancing). She wore flowing draperies and danced with bare feet to classical music rarely heard before outside the concert-hall. Inspired by Isadora Duncan and by the Italian ballet dancer Zucchi, there arose a group of young reformers, led by the artists Benois and Bakst, the composer Stravinsky, the dance designer Michael Fokine, and the great promoter of ballet Serge Diaghileff (q.v. Vol. V). These men helped to bring fresh ideas into Classical Ballet. Fokine, in his ballets *Les Sylphides* and *Petrouchka*, removed the dance from any connexion with acrobatics; believing, like Noverre, that the dancer's function was to use movement to express ideas and emotions. He created the famous *Dying Swan* dance for Anna Pavlova (q.v. Vol. V), the best-known of all the Russian dancers.

Serge Diaghileff also stimulated the dramatic quality of ballet. Some of the world's greatest dancers belonged to his company—Pavlova herself, Karsavina, a classical dancer with an unequalled dramatic range, and Nijinsky (q.v. Vol. V) who helped to re-establish the position of the male dancer. The Diaghileff company performed with great success all over Europe, especially in England. Pavlova, who soon formed her own company, was the first to make use of English dancers; and when after the Russian Revolution Diaghileff left Russia, he did the same. These Russian-trained British dancers, who all danced under foreign names, included Ninette de Valois, Lydia Sokolova, Alicia Markova, and Anton Dolin, and they formed a nucleus around which British ballet was to develop.

The Camargo Society was formed in 1930 mainly by P. J. S. Richardson and Arnold Haskell. It was supported by dancers and composers such as Ninette de Valois, Marie Rambert,
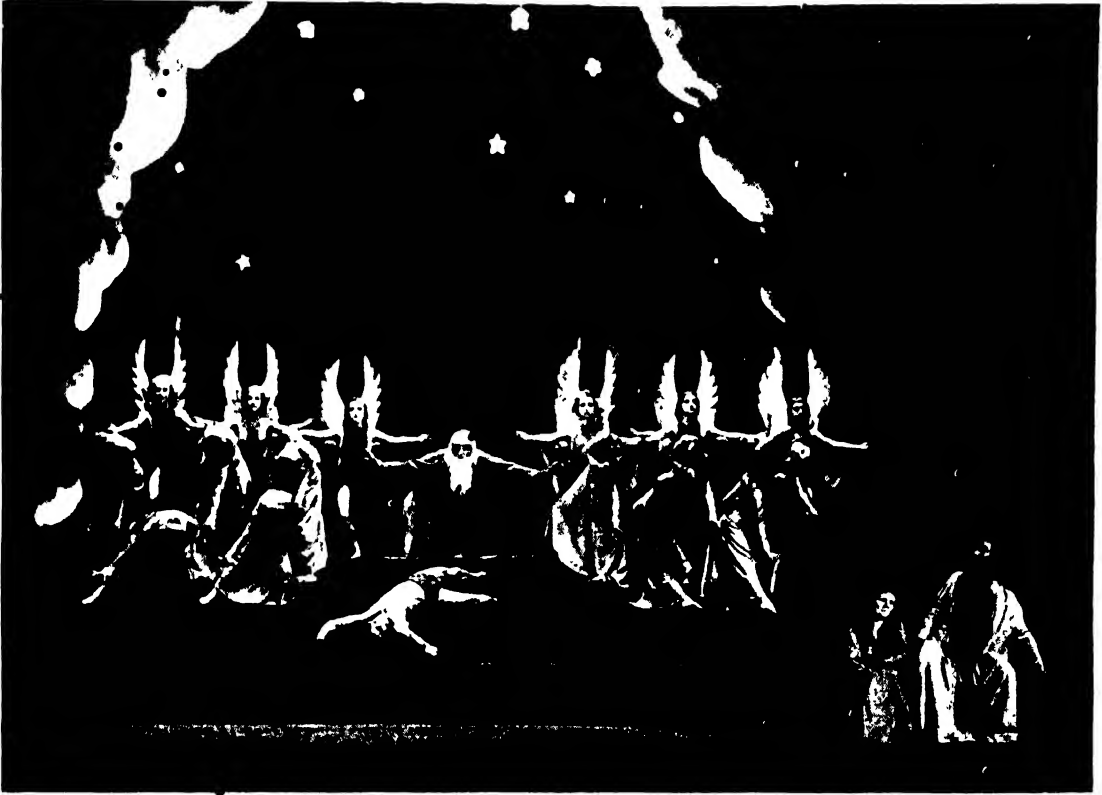
A SCENE FROM 'JOB'

This modern ballet, by Ninette de Valois, is based on the engravings of William Blake. *J. W. Debenham*

Frederick Ashton, and Constant Lambert, and gave four performances a year. As a result of its success, Ninette de Valois and Lilian Baylis formed a company known as the 'Vic-Wells', later to become the Sadler's Wells Ballet, which is now the resident company at the Royal Opera House, Covent Garden, with a second company at Sadler's Wells. It has a school of its own, combining a general education and a training in ballet. It grew from a group of six dancers, and now has a large repertoire of classical ballets and such original modern creations as Ninette de Valois's *Job*, Robert Helpmann's *Hamlet*, and Frederick Ashton's *Symphonic Variations*. Sadler's Wells has produced some of the greatest of contemporary dancers, among them Margot Fonteyn and Robert Helpmann.

To-day ballet enjoys a popularity that it has never known before, even in the great days of Taglioni, and several new companies have arisen in the last few years. Colonel de Basil and others have carried on the Russian Ballet tradition; but the tendency in England, France, and America has been towards national movements, and in Russia itself the great ballet tradition goes on unbroken by the social changes that have taken place. This popularity will continue, but only so long as Fokine's great reforms are observed and ballet remains a true union of the arts of dancing, music, painting, and drama.

See also DANCING, HISTORY OF; FOLK-DANCING, NATIONAL.

BALLROOM-DANCING. The social dances of any period reflect the manners and customs of their time. For instance, in the later Middle Ages, when ladies wore heavy and voluminous dresses, the dances were slow and formal—a type of dancing known as *danse basse*, in contrast to the *danses hautes*, or lively country dances of the peasantry. By the 16th century, however,

THE MINUET

The directions for performing the steps are marked out on the floor. From Kellom Tomlinson, *The Art of Dancing*, 1735

when life was gayer, the dancing became much more lively. The dances of Shakespeare's day were the Branle and the Galliard (called by Shakespeare the 'sink-a-pace' because of its five steps), quick gay dances imported from France. Country dances, such as Sellinger's Round, the Cushion Dance, and Greensleeves, also became popular in the ballroom. The Cushion Dance was as much a singing game as a dance: indeed many of the country dances were not unlike games, and were accompanied by singing; some of them, such as 'hunt the slipper' and 'kiss in the ring', have now come down to us as children's games (*see* SINGING GAMES).

The dances of the 17th and 18th centuries reflected the exaggerated courtesies and formality of manners of the period. The Pavan was one of the most stately, almost more a procession than a dance, in which the richly brocaded dresses of the ladies and the swords and plumed hats of the gentlemen made a very noble show. The dancers usually sang while they danced the Pavan, and kissing formed an important part. The courtly Coranto, in which Louis XIV took a lesson every morning for 20 years, the slow and stately Minuet, perhaps the most perfect of the French dances, and the

rather gayer but graceful Gavotte, were all favourites of the time. With the French Revolution, however, the more exaggerated formality of court life declined, and the dances which Jane Austen's heroes and heroines enjoyed were for the most part the country dances of the people, danced in sets. The romantic revival of the 19th century in literature and art found expression in the ballroom in the Waltz, which first appeared in England in 1812. About this time an old French square dance for four couples, called the Quadrille, was revived, and from 1815 became the ceremonial dance of English court balls. The Lancers, a more popular form of Quadrille and a complicated dance consisting of many figures, superseded it from about 1850, and lasted until the end of Edward VII's reign. The Cotillon was a very elaborate dance with a great variety of figures. In 1840 the Polka took all Europe by storm, and was by far the most popular dance.

All these dances so far mentioned require some skilled technique. Most of them had quite elaborate patterns which had to be learned. Many of them also needed a fair amount of

EARLY 19TH-CENTURY WALTZ
From Cellarius, *Fashionable Dancing*, 1847

THE QUADRILLE
The method of holding hands and three of the positions.
From Carlo Blasis, *The Art of Dancing*, 1820

trot almost impossible. The Foxtrot and Quick-step, although of American origin, have become essentially English dances, with an English style which has been copied over three-quarters of the world.

From the Middle Ages until the end of the 19th century France was the leader in the development of ballroom-dancing, and French was the language of dancing. Almost every dance which gained world-wide popularity originally sprang from a peasant rhythm, and then was taken to court and moulded into shape by the great French dancing-masters of the day. Even those essentially courtly dances, the Minuet and Gavotte, originated among the country folk of Poitou and Provence. The Waltz came from the 'Ländler' or folk-songs of southern Germany; the Polka had its origin in a folk-tune of Bohemia. Since the First World War the lead in ballroom-dancing has come from America; but the new dance rhythms also have their origins among the peasant people. The Foxtrot (and its offsprings, the Blues, the Charleston, and the Quickstep) from the United States, the Tango from Argentina, and the Rumba from Cuba, all have their roots in the primitive West African rhythms carried to the New World by the slave traders of 200 years ago.

After the Second World War there has

space for their performance. In the age that followed the First World War dancing underwent a great change. Dancers sought the simplest way of interpreting in movement the new rhythms which were coming from America—the Rag (syncopation) in 1912, the Jazz (super-syncopation) in 1917, and Swing music in 1937. Although the complicated rhythms of Swing gave rise to some correspondingly complicated and eccentric steps, such as Jitterbug, as a whole such dances have never held their ground for long. One reason for this is probably that the lack of space in most crowded dance-halls makes complicated evolutions very difficult to carry out. By 1945 the four standard dances were the Foxtrot, the Quickstep (or Fast Foxtrot), the Tango, and the Slow Waltz with only a three-quarters turn. In hotels and smart restaurants the Quickstep with small steps was most popular, with an occasional fast Waltz, Rumba, and Tango, the lack of space making the Slow Fox-

A QUICK STEP
Paul Popper

appeared a strong tendency to revive and extend the dances of the 19th century, such as the Quadrille and Lancers, the Barn Dance, and the Waltz Cotillon.

See also DANCING, HISTORY OF: FOLK-DANCING.

BANDS, *see* BRASS BANDS; DANCE BANDS; MILITARY BANDS; PERCUSSION BANDS.

BANJO, *see* LUTES AND GUITARS.

**BANK HOLIDAY,** *see* HOLIDAYS.

BARREL-ORGAN. This consists of a barrel (wooden cylinder) which has a number of brass staples or pins arranged on the curved surface. By turning a handle, the barrel is revolved, and the pins raise certain trigger-shaped keys, which in turn open valves leading to reeds or pipes. These are like small organ pipes and are made of wood or metal. The whole apparatus, except for the handle, is enclosed in a box which also contains bellows. The bellows are pumped by an attachment to the handle which turns the barrel. When the valves are opened, air from the bellows enters the appropriate pipes or reeds, and by a planned arrangement of the pins on the barrel melodies and even harmonies can be played.

Barrel-organs vary greatly in size. Very small ones known as Bird-Organs were used to teach canaries and blackbirds to sing. Larger ones were in general use many years ago in churches and chapels, the barrel pins of which were so arranged that the instrument could play a variety of hymn tunes as well as pieces that could be played while the congregation was assembling. Portable barrel-organs used to be a familiar sight in the streets of Britain and the continent of Europe. Frequently the organ-grinder had a monkey which was usually dressed in a brightly coloured coat, or a tame bear which would dance to the music: the passers-by would put a coin in the organ-grinder's collecting-bag.

A more elaborate form of the barrel-organ is frequently employed to provide music at FAIRS (q.v.). At the centre of a roundabout or merry-go-round there is often a complicated arrangement of organ pipes, drums, horns, and bells, some of which are played by mechanical figures of little men and women.

BASEBALL. Unquestionably the national game of America, baseball was believed to have evolved out of the game of ROUNDERS (q.v.), and to have had its origin in England. It is now known mainly to have originated from the American game of 'One Old Cat', which was played with bases—hence the name baseball. It owes its present form largely to Abner Doubleday, who marked out the first field at the village of Cooperstown, New York, in 1839. The first organized club, the Knickerbocker Baseball Club, was started in 1845, and professional baseball dates from 1863. The Cincinnati Red Stockings were the first regular professional team.

The game is played on a large field on which is marked a diamond 90 feet square (see diagram). The field, called a 'diamond' in America, may have a grass or any other suitable surface which is smooth and free from stones. At one point of the diamond is 'home plate', the point where the batsman (or 'batter') starts. The other three points of the diamond mark the bases—1st base to the right of home plate, 2nd base straight opposite, and third base to the left, each 90 feet apart. 60 ft. 6 in. from 'home base' on a direct line to 2nd base is the 'pitcher's box', a slightly raised mound on which
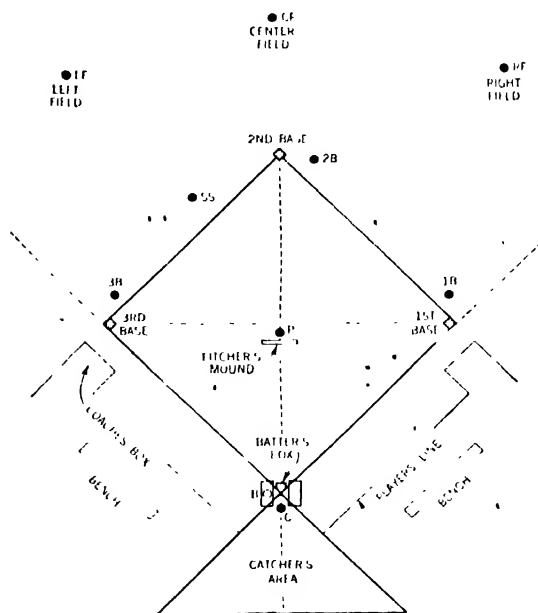
A BASEBALL DIAMOND

THE BASEBALL DIAMOND IN ST. LOUIS, U.S.A.

is a rectangular-shaped piece of rubber 2 ft. 6 in. in length, from which the bowler (or pitcher) delivers (or pitches) the ball. The lines of the sides of the playing field, leading right and left from home plate, are extended out into the field and are called 'foul lines'—for all fair hits must be within these two arms.

Each team fields nine players, who wear the uniform of the team—cap, shirt, trousers, stockings, and spiked shoes. Each player wears a special type of glove according to his position in the field. The fielding team consists of a pitcher, a catcher (a very important position corresponding to wicket-keeper in cricket), four infielders and three outfielders, placed as shown on the diagram. Amateur and college squads can have any number of players, though only nine on the field at any one time. Substitutions can be made at any time during the game, but, unlike BASKETBALL and AMERICAN FOOTBALL (qq.v.), a player who once leaves the game cannot return as an active player. The ball has a horse-hide covering, weighs between 5 and $5\frac{1}{4}$ ounces, and measures between 9 and $9\frac{1}{4}$ inches in circumference. The bat must be round, of one piece of hard wood, and not over $2\frac{3}{4}$ inches in diameter nor more than 42 inches in length.

It is the aim of the batting team to secure runs, a run being scored whenever a batter, after touching the first three bases, reaches the home base before three men have been put out. The batter stands in the 'batsman's box' and grips the bat firmly with both hands. He swings his bat parallel to the ground and tries to hit the ball as hard as he can between the right and left foul lines. Each batter attempts to hit one of the three balls pitched to him in the strike zone, so that he is able to reach a base before the ball can be fielded and thrown there. If, however, he is hit by a pitched ball, or receives four balls from the pitcher—that is, four pitches too high or too low or not over home plate—he is allowed to move on to 1st base—the first point in his progress towards a run. He is out, how-

ever, after three successive 'strikes'—that is, fair pitches which he fails to hit. He is also out if he hits a ball which one of the fielders catches, or if he fails to reach 1st base before the 1st base fielder is there with the ball.

The pitcher pitches or bowls the ball in any manner he may choose—overhand, underhand, or sidearm. Most of the successful pitchers in the professional ranks are big men who pitch the ball from an angle about half-way between the direct overhand and the sidearm delivery. A pitch which does not pass over the home plate, or which is higher than the batter's shoulder or lower than his knees, is a ball: four such balls give the batter a base on balls or a 'walk'. If, however, he hits at a foul ball and it is caught, he is out.

The catcher stands or crouches in his position behind home plate. He is well protected with a padded mitt, a mask, chest-protector, and shin-guards. He must not only field the area round home plate, but must also try to put out players attempting to advance from one base to the next. When a player advances without a hit, it is called a 'stolen base'.

The fielding team, attempts to put out three men before the batting team can secure a run. Players can be put out not only when they are batting, but at any time when they are running between one base and another. It is essential for a runner, having safely made 1st base, to get on to the next base as soon as he can, in order to vacate 1st base for the next batter—and so on. But at any such time he can be put out if the ball reaches the baseman at the base to which he is running before he can get there, or if the baseman with the ball touches, or 'tags' him between the bases.

It is easy to see that baseball is a very fast and exciting game, in which speed and accuracy are of essential importance. All flyballs must be caught in as near a throwing position as possible, so that no time is lost in making a throw to one of the basemen, who may be able to put out a second player. Balls hit along the ground must be fielded without any lost motions, extra steps, or false movements of the body. A fraction of a second lost in making a throw to the guardian of a base may let a base runner reach safety.

When three men have been put out the teams change positions, the other team batting until three men on that side have been put out. An

'innings' is then said to have been played. A regulation game consists of nine innings; although if rain or other causes interfere, the game is considered completed provided that five or more equal innings have been played. If at the end of nine innings the score is equal, play is continued until one team scores more than the other in an equal number of innings.

In 1948 there were two Major Leagues and sixty Minor Leagues of professional baseball teams. More than 300 cities in the United States, eleven in the Dominion of Canada, and one in Cuba are affiliated with the National Association of Professional Baseball Leagues. Professional baseball is run in America as a big business—the ownership of the big league clubs being worth a great deal of money. Each club, as well as having a team manager, generally a retired player, has also a business manager and staff. The promotion of players from Minor to Major League teams is by the 'draft system'— a very exactly organized method of buying and selling. A professional player is the property of his team, and cannot refuse to be sold to another team. The hope of every player is, of course, to play in the Major Leagues.

See also AMERICAN FOOTBALL.

BASKETBALL. This game, which is known in a slightly different form in England as netball, was invented in America in 1891 by James Naismith, an instructor at the Y.M.C.A. College of Springfield, Massachusetts. Naismith intended it to be an indoor game (though in England it is played chiefly out of doors), his idea being to produce a game which could be played during the winter when the ground was too hard or too snowy for BASEBALL (q.v.), and which would be fast, skilful, and interesting enough to catch people's fancy. He certainly succeeded: in America there are seven national
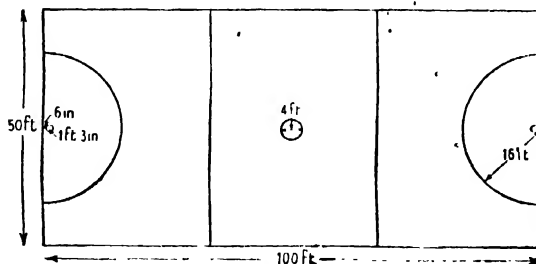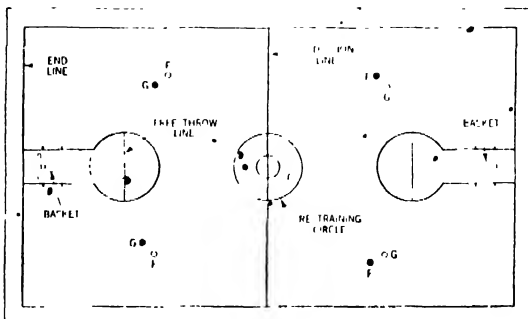

A NETBALL COURT

college basketball championships, as well as a professional championship. The game is much played also in Canada and the Far East, as well as in many European countries; and the English netball is well known, being played largely by women and girls, especially young children.

Both netball in England and basketball in America are played with an inflated leather ball like a football, which is thrown in the air instead of kicked; and the object in both games is to score goals by throwing the ball into a net or basket raised on a pole or fixed on a board 10 feet above the ground. The number of players may be five, seven, or nine a side, depending on the size of the court. Five is the regulation number for the American game. A normal-sized court is rectangular, and for seven players is usually about 100 feet long by 50 feet wide. A netball court has a circle at each end surrounding the goal. Goals can only be scored from inside this circle, which is known as the 'shooting circle', and free shots for goal are taken from the edge of the circle. The basketball court has a line 15 feet from the back line, from which 'foul goals' counting one point, can be scored. 'Field goals', counting two points, can be scored from any part of the court.

In neither game may any player interfere with the player who has the ball: he may not be tackled or barged, or in any way impeded from passing the ball, except by an interception of a pass. On the other hand, in netball he is not allowed to keep the ball for more than 3 seconds, and in neither game is he allowed to move while he is holding it. All running takes place between throwing the ball and receiving it again. In basketball, however, a player may dribble the ball by bouncing it with one hand only as he runs. A breach of the rules is penalized by a free throw to the other side. The game is started by the referee, who either throws up or bounces the ball between the two centres They each jump for it, and try to tap it to one of their own side. Accurate passing and close marking are essential; every trick of speed, sudden stopping, side-stepping, and feint passing are needed to throw off a marker and get the ball smoothly up the court. All decisions have to be made very quickly, and all movements to be neat and nippy. The game is, for this reason, a very good training for playing any team game.

A BASKETBALL COURT

Naismith succeeded in placing the emphasis on nimbleness and speed rather than on strength and weight; and for this reason basketball and netball are very popular with women. As the game is played in the air, the ball being most of the time above the players' heads, it provides excellent stretching and jumping exercise, very suitable for growing girls. It demands individual skill as well as good team-work, and is exciting to watch and to play. There are international
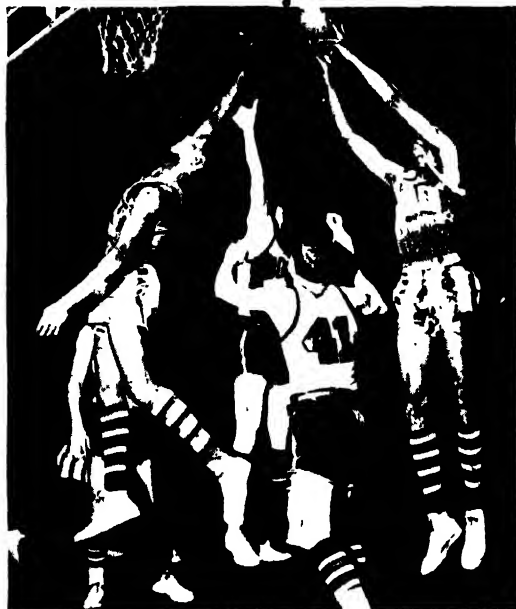
A BASKETBALL MATCH

The Negro team, the Harlem Globetrotters, playing the Boston Whirlwinds. The player on the right is about to shoot. The players in the centre are ready to catch the ball should it fail to enter the net

Keystone Press

matches of basketball played between most countries in Europe, and in England there is an inter-county tournament of netball. In Canada it takes its place with ice hockey as a national winter game; and in America it is played and watched by more people—men and women, boys and girls—than any other game.

BASSOON, *see* WOOD-WIND INSTRUMENTS.

BATHING, *see* SEASIDE RESORTS; SWIMMING.

BATHS, ROMAN, *see* ROMAN BATHS.

BATHS, SWIMMING, *see* SWIMMING.

BATHS, TURKISH, *see* Vol. XI: PERSONAL HYGIENE, HISTORY OF.

BATTLEDORE and SHUTTLECOCK, *see* STREET GAMES.

BEAGLING, *see* HARE-HUNTING.

BEAR-BAITING. In the Middle Ages and right up to the early 19th century, the 'baiting' (literally 'making bite') of bears and other animals by setting dogs on to them was a popular form of amusement. Bear-baiting was, of course, much older than this, for it had been one of the favourite blood-sports of the ancient Romans. In England it became a national pastime, especially during the 16th century, when it was patronized by all classes, including even the ladies of the court.

The bear was tethered by a long chain to a

A marginal drawing from Queen Mary's Psalter (*c.* 1300)
Brit. Mus. Roy. MS. 2B. VII

stake in the middle of a ring, or pit, and about half a dozen mastiffs were let loose upon it. It would lash out with its claws, perhaps killing and maiming a few dogs to start with, and sending the whole pack in retreat. New dogs were put in to replace the dead and wounded, so that there was no pause, and the contest went on until the bear was either overpowered, or proved the winner. The excited cries of the spectators combined with the growling of the bear and the barking of the dogs created such an uproar that we now use the expression a 'Beargarden' to describe any scene of chaos and disorder. Often the entertainment was prolonged by replacing the bear as soon as it was killed or disabled, as many as thirteen bears sometimes appearing in succession. Generally, however, the bear survived and was carefully tended by a keeper for the next encounter. The bears had names, and some of the toughest veterans became famous and were idolized by the public. The favourites of Shakespeare's day were named Sackerson, Don John, and Ned of Canterbury.

Bull-baiting was carried on in exactly the same way as bear-baiting, but was never so popular in England, though it has given rise to the breed of dogs known as 'bull-dogs', specially bred for their powers of holding on once their teeth have gripped. In Spain it developed into the BULL-FIGHT (q.v.). As a novelty, lions were sometimes baited, or a man might himself fight with a savage dog.

Bear-baiting was so much a national amusement in the 16th century that Henry VIII created a special royal officer—the Royal Bearward—whose duty was to look after the king's bears, bulls, and dogs. In 1526 Paris Garden, the most famous of the Bear-gardens, was erected at Bankside, Southwark. It seated 1,000 spectators, the entrance fee being a penny, or twopence for one of the best seats in the gallery. It was on the river bank, near to Shakespeare's theatre, the Globe, and it is very probable that when a bear was needed to appear in a play, the actors borrowed one from across the way. There seems, indeed, to have been some competition between the bears and the actors, for in 1591 Queen Elizabeth prohibited the performance of plays on Thursdays, as it detracted from the bear-baiting held on that day. Every town kept its bear, bear-ward, and pack of dogs, and bear-baiting was held in royal and private parks, as well as in the recognized bear-
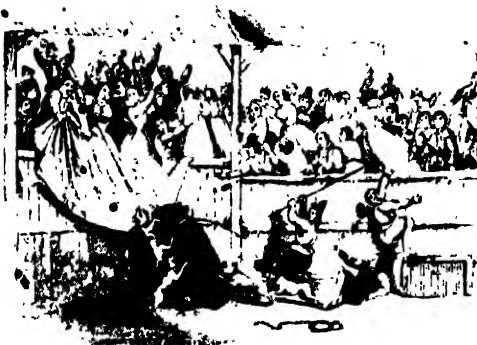
BEAR-BAITING IN THE 17TH CENTURY
E. O. Hoppé

gardens. In the North it was a feature of the WAKES week celebration (q.v.). In Cheshire, in fact, there used to be a popular, if not wholly truthful, catch which ran:

Congleton rare, Congleton rare,
Sold the Church Bible to buy a new bear.

It seemed that the Congletonians of 1662 had saved up their money to replace their ageing Bible, but as their bear died in the interval, they spent their money on replacing that instead.

During the 17th century many attempts were made by the Puritans to put down bear-baiting; but they never wholly succeeded, and by the 18th century it was still a flourishing entertainment. The Regency 'bucks' delighted in all forms of single-combat, such as knuckle-fights and COCK-FIGHTING (q.v.), enjoying not only the brutality of the spectacle but also any opportunity for betting. In the 19th century, however, the public conscience was aroused against the cruelty of such sports, and bear-baiting was prohibited by Act of Parliament in 1835.

BELL-RINGING. A bell is a hollow cup-shaped instrument of cast metal which emits a musical note when struck. The note is produced by the vibration of the metal when it is struck by the clapper which hangs inside the cup.

After much experiment it has been discovered that the most suitable bell-metal is bronze, made in the proportion of four parts of tin to thirteen parts of copper. The shape and proportions affect the tone and pitch, the heavier and larger bells having the deeper notes. The overtones which bells produce can be clearly heard, particularly the 'hum' note, an octave below the strike note, which persists longer than the other overtones.

Small bells, known as handbells, are fitted with leather handles; but larger bells, such as those in church towers, are mounted on strong frames of wood, iron, or steel, and are operated either by ropes attached to the top of them, or by mechanical means. The latter method is employed for striking the hours of a clock or for playing tunes on a carillon.

There are three ways of sounding church bells:

(1) Chiming: pulling the bell-rope just sufficiently so that the side of the bell is struck by the clapper;

(2) Ringing: pulling the bell-rope vigorously so that the bell, starting with its mouth upwards, swings a complete circle, and the clapper strikes the metal heavily;

(3) A lazy, damaging method of agitating the clapper is to strike the sides of the bell by means of a string tied to the clapper. When the bell is tolled on solemn occasions, such as

A BELL BEING CONSECRATED
Miniature from a French Pontifical of the late
15th century. Fitzwm. Mus. MS. 29, f. 249 b
*By permission of the Syndics of the Fitzwilliam Museum,
Cambridge*

funerals, a leather cap is often tied round the clapper to muffle the sound.

Bells are of many sizes and are often of great weight. Probably the heaviest ever cast was The Great Bell of Moscow (1733) which weighed 180 tons. This bell was broken by accident before it could be used. Moscow now possesses a bell of 128 tons. The largest bell in Britain is thought to be Great Paul of St. Paul's Cathedral, London, which weighs nearly 17 tons. Big Ben in the Tower of the Houses of Parliament weighs 13 tons 11 cwt. and Great Peter of York Minster weighs 10 tons 15 cwt.

Tunes can be played in several parts on small handbells. The bells, each of a different pitch, are placed on a table and picked up and rung in the appropriate order. There are usually a number of performers, each playing two or three bells.

In church towers there is usually a set of bells, known as a peal, numbering up to twelve or more. Each bell is tuned to a definite pitch, and by pulling the bell-ropes in various orders, the bell-ringers can play a great variety of bell-tunes, called 'changes'. The greater the number of bells the greater the number of changes possible—with twelve bells it is nearly 480 millions. Only certain changes are normally rung, such as Grandsire, Triples, Bob Major, and Oxford Treble Bob. It takes 2 to 4 hours to ring a complete set of changes of even a small peal. Change ringing requires concentration and physical strength: in order to become a really competent ringer years of practice are necessary.

Change ringing is not greatly practised on the continent of Europe. There, bell-music is usually produced on a carillon, which consists of a set of bells—sometimes as many as seventy —which are operated by one man called a

A BELL-RINGING PRACTICE AT ST. PETER'S, TUNBRIDGE WELLS
Fox Photo

carillonneur who performs on a manual, and a set of pedals which resembles an organ. The keys need much pressure, which is applied by the whole hand in a leather glove. The bells are fixed—only the clapper can move—and the clappers are connected with the keys of the manual and the pedal board. The carillonneur can play a great variety of tunes. Folk-tunes and simple classical compositions are most popular, and it is possible to produce shades of expression and even simple harmonies. The most famous carillons of Europe are in Belgium (especially at Bruges), Holland, and northern France. In England there is an interesting carillon at Bournville School, Birmingham, and there are a number of carillons in the British Dominions and in the United States of America. A fine example is in the Mountain-Lake Singing Tower in Florida.

Bells as we know them were most probably introduced by the early Christian Church. Most ancient bells were inscribed with their dates, with the names of their makers, or with mottoes. A bell at St. Chad's, Claughton, Lancashire is dated 1296. On a bell at St. Mary the Virgin, Oxford, is inscribed:

Be yt knowne to all that doth me see
That Newcombe of Leicester made me. 1612.

Bells have been used in England to summon the people to church, soldiers to arms, to celebrate national and local rejoicings, and to give warning of impending danger. William the Conqueror ordered the Curfew Bell to be rung at eight o'clock each night to warn people to put out their fires. There are not a great many ancient bells in England. At the dissolution of the monasteries in the reign of Henry VIII the bells were confiscated and melted down for their metal. In the 17th century change ringing was introduced, and many churches had their bells recast or replaced by bells tuned to the notes of the major scale. During the Napoleonic campaigns the church bells in whole districts of France were removed and melted down to provide metal for cannons.

·The study of bells is called campanology, bell-ringers being known as campanologists. The oldest society of campanologists in England was founded in 1637 and has the title, 'The Society of College Youths'. In 1848 a team of handbell ringers from Lancashire performed before the Court of France and also went to Spain where they achieved much success. Handbell ringing was especially popular during Queen Victoria's reign, and campanologists performed before the Queen at Osborne and Windsor.

BETTING (or wagering, which is the old-fashioned term) is a very ancient form of GAMBLING (q.v.) on the results of races of various kinds. Large bets are still made over boxing matches, and many people bet about the results of football games (*see* FOOTBALL POOLS). However, the greatest amount of betting to-day, especially in Britain, North America, and western Europe, is on HORSE and GREYHOUND RACING (qq.v.). Betting and other forms of gambling have been the cause of so much social distress that in most countries steps are taken to control them.

Bets have been made on the racing of horses, either with riders on their backs or drawing chariots, since ancient times. The racing of greyhounds after an 'electric hare' is a new sport, and in former days the betting was over COURSING (q v.), in which greyhounds race each other while chasing a live hare. Bets on horse and greyhound racing can be made either with a bookmaker or with the totalisator; but betting on coursing, and indeed all other sports, can be carried on only with a bookmaker.

A bookmaker makes his living by taking bets. Most bookmakers will take bets on almost any sporting event; but the greater part of their business comes from betting on horse and greyhound racing, on which the system of betting is the same in every important respect.

A bookmaker makes 'a book' on every race; he 'lays' odds against a runner's chance of winning, or 'takes' odds on a popular favourite. A runner at 'odds on' is considered to be more likely to win the race than to lose; runners at 'odds against' are considered more likely to lose than win. The odds against a runner's chances are expressed as 5 to 1, 8 to 1, &c., and each runner's odds are referred to as his 'price'. If one backs a runner who wins at 5 to 1 against, the stake is returned plus five times the stake money. Backers of a runner who wins at 5 to 1 on, however, receive only one-fifth of their stake money in addition to the stake itself. Each runner's price is calculated according to his 'form', that is, his chance of winning, and according to the amount of money the bookmaker will lose if he does win. The odds of each runner change considerably during the period

immediately before a race is run, as a heavy bet on a runner will cause its price to 'shorten' (for instance, to change from 3 to 1 against to 2 to 1) to lessen the bookmaker's liabilities should it win. Similarly, lack of bets on a runner will make its price 'lengthen'. The odds, in fact, are determined by the law of supply and demand. A bookmaker tries to make his 'book' so that he wins money whatever wins. He cannot always do this, and bookmakers usually lose money if a short-priced favourite wins. An 'outsider', a horse at long odds, is the most profitable for the bookmaker if it wins.

A bookmaker will take bets 'to win' or 'each way'. An 'each way' bet means a bet for a win or for a place in the first three, if there are 8 or more runners. There is no 'place' betting if there are less than 5 runners, and with 5–7 runners 'a place' means first or second only. A bookmaker will pay a quarter of the horse's price for a 'place'; for example, he will pay 2 to 1 on a horse which finishes 3rd and was 8 to 1 for a win. When the price of the favourite in a race is 2 to 1 against, bookmakers will shout '2 to 1 the field'. This means that they will lay odds of 2 to 1 (at least) against any runner. If the second favourite is 3 to 1, bookmakers will shout '3 to 1 bar one'. This means that they will lay odds of 3 to 1 (at least) against any runner except the favourite. If the third favourite is 5 to 1 they will shout '5 to 1 bar two' and so on.

Bookmakers frequently bet with each other. Particularly when they stand to lose a large sum if a certain runner wins, they will back it themselves with another bookmaker, thus insuring against loss. On racecourses these bets are made, and other messages passed, by special bookmakers' signallers called 'Tic-Tac' men. These men, so called because of the extraordinary signals they use, sometimes wear long white gloves, and can often be seen perched on the top of the stands so that they can signal over the heads of the crowds.

Most reputable bookmakers have offices where they take 'off the course' bets on credit. Some bookmakers never bet on a racecourse, but make their living entirely from their credit business. These credit betting offices are usually called 'starting price' offices, because the odds involved in credit betting are normally the odds at which bets are made on the racecourse at the moment the race starts. In the past there was often disagreement about what the 'starting price' was,

but now, by agreement with the Bookmakers' Associations, two men, employed by the newspaper *Sporting Life*, announce the starting price of each horse on the racecourse as soon as the race is over. In Britain far more money is staked off the course than on the course, both for horse and greyhound races.

The totalisator is a machine for betting on the pool system. It was invented in France in the 1860's, where it is known as the 'pari-mutuel'. The Tote, as the totalisator is commonly called, first appeared on British racecourses in 1930. Greyhound stadium authorities operate their totalisators on the same system but under their own arrangements. The Tote operates in Britain in direct competition with bookmakers, and is now to be found on every racecourse. In many other countries, notably France and some states of the U.S.A., bookmakers are illegal, and the 'pari-mutuel' has a monopoly.

The system of betting and of calculating winning dividends is fundamentally the same wherever the Tote or 'pari-mutuel' is found. In all forms of pool betting the amount of money in the pool contributed by all the backers is divided among the successful backers; therefore, the smaller the number of successful backers the larger will be the dividend. Before paying successful backers, the Tote retains a percentage of the total stakes to pay the expenses of running it. In Britain grants from the money thus retained have to be made to animal charities, to veterinary institutes, and for the benefit of horse breeding. The British Tote, which has to compete with bookmakers, only retains 15 per cent. of the money staked on losing runners. In most other countries a higher percentage is retained.

In Britain the betting unit on the Tote is two shillings, and all bets must be made in multiples of this sum. One can bet for a win only, a place only (most bookmakers will not do this), or each way. With five runners or less, the Tote has a forecast pool, in which the gambler has to name the first two runners in the correct order. There is a forecast pool on every greyhound race.

The Tote building is usually large and conspicuous, with windows marked for the sale of betting tickets, two shillings, ten shillings, one pound, and five pounds. As each ticket is sold (usually by a clerk, though some courses have an automatic selling arrangement), the sale is recorded by a machine which keeps continuous
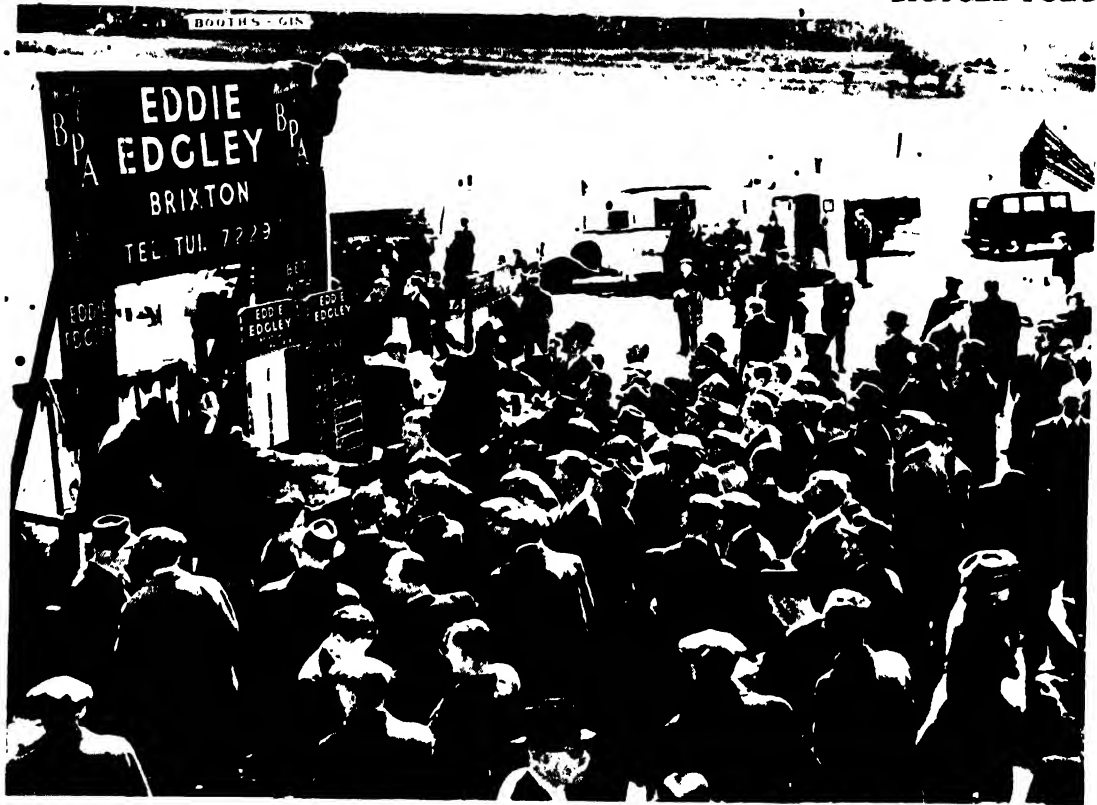
A BOOKMAKER TAKING BETS ON THE COURSE AT EPSOM
Sport and General

account of the total amount staked and the amount staked on each runner, separate account being taken of money staked for a win and for a place. A successful bet with the Tote usually wins about the same as a similar amount staked with a bookmaker. When an 'outsider' wins, however, the pool system usually results in a much bigger return from the Tote.

The law concerning betting in Britain is part of the general laws governing gambling. In accordance with the various gaming acts, the law cannot be invoked to enforce betting debts, either owed by a bookmaker or due to him. Money owed to the Tote authorities, however, is a legally enforceable debt. A special Act of Parliament created the Racecourse Betting Control Board in 1928 with authority to operate the Tote on any racecourse in the country, and as these bets are legally sanctioned the law will enforce their payment.

Except on a racecourse it is illegal to bet in cash; it is illegal to visit any place (except a racecourse) for the purpose of betting in cash or on credit. Thus it is illegal to visit a bookmaker's office to make a bet, or to take or make bets in any public place, such as a street or public-house. Though the law will never help in the settlement of bets made with a bookmaker, it is legal to bet with a bookmaker on credit by telephone, telegram, or letter. A firm called Tote Investors Ltd. accept 'off the course' bets on behalf of the Tote on credit only, bound by the same rules governing bets with a bookmaker.

See also GAMBLING.
See also Vol. VII: SPECULATION.

BEZIQUE, *see* CARD GAMES.

BICYCLE, *see* CYCLING; CYCLE RACING. *See also* Vol. IV: BICYCLE.

BICYCLE POLO. This game of Polo on bicycles was invented in 1891 by an Irishman,

Richard J. Mecredy, who christened it 'Polo on Wheels'. In 1897 the Bicycle Polo Association was formed with headquarters at the Sheen House Club, West London, but the game gradually died out. After a brief comeback in 1908 it was completely dropped, until in 1929 Cyril Scott, a London racing cyclist, revived it and compiled a set of rules.' In 1930 he re-formed the Association. From that time until to-day the sport has become increasingly popular in England, Scotland, Ireland, Wales, and France, and regular international matches are played between the five countries.

Teams consist of six men, only five being allowed on the field at one time. The duration of the game is six 'chukkers' or periods of play of 15 minutes each, and team changes can be made at the end of chukkers. The mallet or 'stick' is similar to the one used in polo, and the ball, which must not exceed 3¼ in. in diameter, nor 4 oz. in weight, is made from bamboo root. The bicycle used has a short wheel-base of less than 40 in., carries no mudguards or brakes, and is fitted with a low, fixed gear. The field is 100 yards long by 60 yards wide, and the goals are 4 yards wide by 3 yards high.

BIG-GAME FISHING. A game fish is one which is hunted by the fisherman or angler for sport, and which tries his patience and skill to the utmost. A big-game fish is one which tries his strength and endurance as well. The sport of hunting some of the powerful fighting fish of the tropical seas is full of danger, and requires both courage and presence of mind.

Almost all big-game fish belong to tropical and sub-tropical seas. Most game fishing in Britain and northern Europe is in pursuit of

BICYCLE POLO
A match in progress between the Crystal Palace and Arsenal teams. One of the players has been unseated.
Sport and General
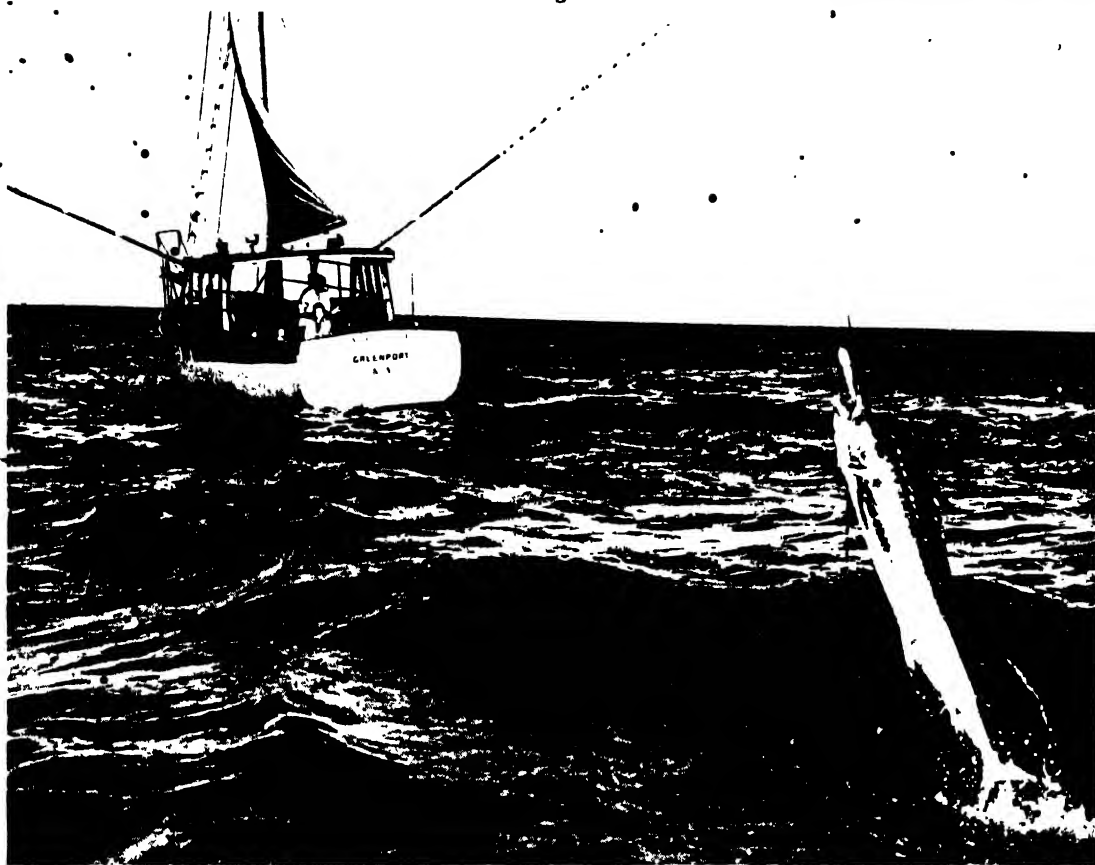
CATCHING A MARLIN OFF WEST PALM BEACH, FLORIDA
New York Times

Salmon and Trout in the rivers of Britain and Scandinavia (*see* ANGLING, FRESHWATER), although of recent years one powerful fighting fish, the great Tunny, has visited our seas to prey upon the shoals of herrings which frequent British waters in their season. This giant of the MACKEREL family (q.v. Vol. II) often grows to a huge size, well over 200 lb. in weight. The chief big-game fishes of tropical seas are various members of the SWORD-FISH family, the Hammer-headed SHARK, the SAW-FISH, and the TARPONS (qq.v. Vol. II); and this article deals with man's battles with these powerful and often dangerous foes.

There are two main groups of the Sword-fishes, the true or Broad-billed Sword-fish, and the Sail-fishes, usually called Marlins, the most common being the Black Marlin and the Striped Marlin. The Broad-billed Sword-fish, with their broad beaks flattened from side to side, roam most of the great ocean spaces, and are as a rule larger than the Marlins, which are more local and are found mainly in the Pacific, especially off the Australian and Californian coasts. On the coasts of Australia, south of Sydney, rod fishing for these monsters is a popular sport. Members of rival fishing clubs contest eagerly to make a record catch. One Black Marlin weighing 672 lb. has been caught, and the largest Striped Marlin was about 314 lb.

These fish are often called Sail-fishes because they have a back fin of exceptional size standing high upon the back, like the sail of a great racing yacht. They are also known as Marlins because they are armed with a spear-like beak, much the same shape as a marlin-spike. The spear is very long and extremely strong—a really fearsome weapon when the Marlin decides to

attack the angler's boat. Many stories are told by sailors and fishermen of the way this great spike is sometimes thrust through the planks of a ship. The Sword-fish, when it finds it cannot withdraw the spike, struggles violently until it often ends by breaking it off. Fishermen tell of how members of the crew of a fishing-boat have been wounded when the spear of the Sword-fish has come right through the boat. One Sword-fish hunter fitted the bottom of his boat with a sheet of iron for the rope-tender to stand on when hauling in the line: but on one occasion the fish struck so violently through the boat that the steel plate was lifted suddenly, and the man thrown overboard and drowned. The uncertainty of the Sword-fish's behaviour adds to the excitement of the fight. It may make a wild and powerful charge, it may leap into the air, or it may dive to a considerable depth.

The Hammer-headed Shark is an ungainly great fish, with an eye seated at the end of a stout projection jutting out from the side of the head. It often weighs between 500 and 600 lb. and is extremely difficult to tire. All the strength, skill, and endurance of the angler are needed in order to land the fish by means of rod and line.

Saw-fish, found commonly in the Bay of Panama, are some of the biggest and fiercest of game-fish. One of them, caught among the Pearl Islands, measured 12½ feet long without its saw, which measured another 3 feet; its body weighed just over 800 lb. The saw is a greatly elongated beak, with a row of strong, sharp teeth on each side, with which the fish rips and slashes its prey. The saw is also used to dig up the shell-fish on which it generally feeds.

It has the habit of frequently lying quiescent on the bottom of the sea. The sportsman, taking advantage of this, chooses a fine day when the sea is calm and the water so clear that objects on the sea bottom are visible. Armed with a stout harpoon, he takes his boat over likely banks until he sights a Saw-fish. Then he throws his harpoon vertically, driving it well into the fish. Now begins a mighty struggle. Often the fish tows the boat at a great rate for miles before it begins to slacken its pace. Even then it may recover energy and make a second and even third rush before the fisherman gains the upper hand. When the fish is really tired, the sportsman steers his captive towards a convenient beach. As soon as possible

the crew leap ashore and haul the exhausted monster up the shingle. At this point they have to be careful to keep out of the way of its great saw, as it lashes out with head and tail in its vain efforts to get back to the sea.

The Tarpon is a great game-fish, of gigantic size and fighting power, belonging to the Herring family. It may grow to a length of 7 feet, and may weigh over 200 lb. Its distributional range is wide, including both the Caribbean Sea and the waters off the west African coast. A European sportsman who lands a huge Tarpon thinks himself a mighty hunter; but the humble Kru fishermen of west Africa, going out in his flimsy dug-out canoe, often catches one or even two of these great fishes in a day's fishing.

See also Vol. VI: FISHING, HISTORY OF; SHARK FISHING, TUNNY FISHING; HARPOONING.

BIG-GAME HUNTING. In general, the term 'big game' means wild, four-footed animals which are too large to be killed with a shot-gun. The quarry may vary in size from an elephant or rhinoceros to an antelope or gazelle no larger than a goat. They can be divided into dangerous and non-dangerous game, dangerous game being further divided into thick-skinned (such as elephants or buffalo) and thin-skinned (such as lion, leopard, or tiger) according to the type of bullet needed against them. Big game may be hunted with the rifle, or— an even more exciting enterprise—with the camera.

Big-game hunting is a sport which has been pursued by kings and nobles since very early times. The sculptures, bas-reliefs, and paintings of most of the early civilizations of the Near East show scenes of big-game hunts with bow and arrow or spear, generally carried on from a chariot or from horseback. It is said, for instance, that Assur-bani-pal, king of Assyria in the 7th century B.C., slew 500 lions. In medieval Europe elaborate boar and bear hunts were organized for the entertainment of king and court, and at a later date the great bear hunts of Tsarist Russia were a favourite sport for the nobles. The hunting has not always been only for sport, but often to rid the neighbourhood of a dangerous pest. At the end of last century, for instance, Col. J. H. Patterson had to organize a series of lion hunts in order to destroy two cunning man-eating African lions at Tsavo, who were actually holding up work on the Uganda Railway.

A TIGER HUNT ON THE BORDER OF NEPAL, INDIA
The line of elephants is beating through the long grass. The sportsmen with their guns are in the *howdahs* on the two far elephants. *E.N.A.*

There are three main methods employed in hunting big game: stalking, still hunting, and tracking. Frequently it may be necessary to combine stalking with still hunting, and tracking with both.

In stalking, after the quarry has been sighted from a distance, the hunter endeavours to creep close enough to shoot. The ground is invariably fairly open, and the hunter's task is to avoid being seen, heard, and particularly smelt, before he can get near enough for a certain shot. He must make use of every bush or rock to avoid being seen; he must work up or across the wind to avoid being scented; and he must make no unnatural noise. In mountains, for example, melting snow or other agents often cause stones to fall, and game pay little attention to such sounds; but a human voice or the clink of metal will cause immediate alarm. The hunter must be ready instantly to 'freeze' into stillness if the animal looks in his direction.

Still hunting is used in wooded country where the game cannot be seen from a distance. The hunter moves slowly and silently through forest or scrub, keeping a careful look-out so that he may see his quarry before it sees him. Then he must shoot quickly before the animal has time to move. Few forms of hunting are more difficult or more exciting. In tracking, the hunter follows up the animal by its tracks, a method used particularly in following up a wounded animal—which no sportsman will leave to die if he can possibly help it.

Special conditions demand special treatment. In India, for example, both 'beating' and 'sitting up' are widely practised. The principle in beating is to induce the animal to take its natural line of retreat. A line of beaters, as few as can cover the ground adequately, moves silently through the undergrowth, coaxing, rather than driving, the animal towards the hunter. Some big game, such as tigers and panthers, kill more than they can eat at one meal. If a hunter finds a half-eaten carcase, he may make a platform in a tree, or hide near-by, waiting for the beast to return. Probably it will not return until after dark; in which case the hunter shoots by the light of an electric torch, sometimes fixed to his

rifle, which he switches on when he hears the prey. Sometimes the hunter tethers near a live bait such as a goat to attract the quarry. When sitting up after big game, it is essential to keep silent and as still as possible. In America the guides entice the great bull moose towards the hunter by imitating the call of its mate. The bull will then often charge recklessly into the open, offering an easy shot.

The northern parts of North America, Europe, and Asia have very much the same kind of animals. In the Arctic zone there are walrus and polar bear; the cold tundras, or 'barren lands', are the home of reindeer (called 'caribou' in America); while the zone of coniferous forests is the haunt of elk (the 'moose' of America), reindeer and brown bears. Wherever there are high enough mountains, varieties of big wild sheep are found. Other varieties of deer are found in America; and the red deer occurs in Scotland and also in the forests of central Europe as far as the Caucasus, Persia, and Kashmir. The Caucasus is also the home of wild goats, such as ibex and tur, as well as chamois; and here the leopard, or in North America the puma, makes its first appearance. Black bears, as well as brown, are found both in America and the Himalayas. The Tibetan plateau is the home of the biggest of the wild sheep and of the gazelle, as well as of immense herds of antelope and yak. In Europe there are chamois in the Alps and Pyrenees, ibex in Spain and Northern Italy, and wild sheep in Sardinia. The hot jungles of India and Asia hold tiger, sloth bear, elephant, rhinoceros, buffalo, gaur or saladang (the 'bison' of the Indian sportsman), leopard (or panther), and different varieties of deer.

Africa still offers the best hunting grounds of the world. It is the home of many varieties of antelope (though there are no deer), and of the lion. Elephant, rhinoceros, and buffalo are plentiful in some parts. The animals of the deserts are chiefly varieties of antelope, including that rare animal the addax, one of the hunter's greatest prizes. The mountains of Abyssinia and the hills bordering the Red Sea hold a variety of ibex; while the Barbary sheep is found both in the mountains of northern Africa and the rugged hills of the Sudan.

New Zealand now affords some of the finest stalking in the world, owing to the successful importation of red deer, which attain a great size and carry wonderful heads. Wild sheep

and goats have been imported from the Himalayas, deer from India, moose and wapiti from America, and chamois from Europe.

Even the dangerous big-game animals very rarely attack unprovoked, except at such times as they are protecting their young. Almost all animals would rather rely on their speed and cunning than on attack. One of the most dangerous of big game is the African buffalo which will sometimes charge at sight. A wounded buffalo which has taken cover is a very difficult adversary, as it will take the initiative in the hunt and may charge the hunter before he can shoot. An African elephant is very difficult to approach, as its protective coloration makes it hard to see, and it catches up every scent with its waving trunk. Unless it is hit in a vital spot, a shot may check its charge only for an instant. The hunter, therefore, must usually be within about 50 yards range before firing. The rhinoceros and hippopotamus are less fascinating game animals, for, though they are not easy to kill, they do not display the same cunning in the chase as do the big cats, for instance.

In India a hunting expedition is called 'going on shikar', and in East Africa it is usual to talk of going on 'safari' (from the Persian word for 'journey'). In many cases the hunters have to travel long distances to reach their shooting grounds, and this necessitates a good deal of preparation: camping equipment, for example, must be carried. When actually tracking down an animal, the hunter often prefers to travel alone or with a few companions, leaving the main party at a base camp. Reports of the animal's movements and habits are collected from the local inhabitants, and careful plans are made from these and a detailed knowledge of the lie of the land.

The most suitable rifle must always be a matter of personal experience and preference, as everything depends on the type of quarry and the nature of the country. A double-barrelled rifle of about ·470 bore is suitable for dangerous game, using solid bullets for thick-skinned varieties and soft-nosed for the thin-skinned (see SPORTING GUNS AND RIFLES). An alternative is a single-barrelled magazine taking the ·375 Magnum, ·404, ·416, or ·425 cartridges. For still hunting non-dangerous game a rifle which fires a bullet of at least 220 grs. with a muzzle velocity of about 2,500 feet per second is excellent; but for stalking, a muzzle

velocity of 2,800 f.s. or over is needed, since a flat trajectory is here the most important factor. The bullet should weigh not less than 130 grs.

All the countries now have their game laws, with close seasons during the breeding time; and licences must be obtained in order to hunt. In some countries the licence allows the hunter to shoot only a limited number of animals, so that there is no danger of the species being destroyed.

See also HUNTING, HISTORY OF; DEER STALKING; SHOOTING, HISTORY OF; SPORTING GUNS AND RIFLES.

BILLIARDS. **1.** HISTORY. The origin of the game is uncertain —some authorities say that it has grown from a game known to the Greeks in 400 B.C. It appears to have been played in France as early as 1452, and was certainly an established game in Shakespeare's day in England: Mary Queen of Scots, for instance, complained during her imprisonment in 1575 that her billiards table had been removed. In the 17th century Louis XIV, who was ordered to take exercise after meals, brought billiards into fashion. Queen Victoria had a billiards table installed at Windsor Castle, and in the early 19th century the first public billiards room was opened at the Piazza, Covent Garden. There are now over 2,000 public rooms in England.

During its history there have been many varieties of billiards tables and equipment, and consequently of the game itself. Two principal games are now played— billiards proper and snooker pool. A generally recognized code of rules was drawn up by the Billiards Association in 1885, and in 1919 the Billiards Association and Control Council was established as the official body responsible for organizing the various championships.

2. BILLIARDS is normally played between two players, although four or more can take part by dividing into two sides. A standard table, 12 feet by 6 feet, has six pockets, one at each corner and one at either side of the centre of the table. The table 'bed' is made of slate and is covered with specially manufactured, absolutely smooth, green cloth. The surrounding 'cushions' or edges are of cloth-covered rubber. The table is marked as shown on the diagram. Each player has a cue, usually about 4 ft. 9 in. in length, ending in a special leather tip, which is chalked to prevent its slipping on the ball. Three balls

made of ivory or composition are used, one white, one white with a black spot, and one red. The players each use one of the white balls, and the red ball is placed on the spot at the top of the table. Each player starts with his ball 'in hand', that is, off the table. The first player plays from any part of the 'D' at the bottom end of the table (see diagram). A player scores by striking the other balls with his own. The principal methods of scoring are: (i) by striking both the opponent's ball and the red ball by running off one on to the other (known as a 'cannon' and counting 2 points); (ii) by entering a pocket with one's own ball off the opponent's ball or the red ball (known as an 'in-off' and counting 2 and 3 points respectively); (iii) by driving the red ball into a pocket by striking it with one's own ball (known as 'potting' and counting 3 points); (iv) by potting the opponent's ball (which counts 2, but which is bad play, as the opponent's ball, in contrast to the others, is not brought back on to the table until the end of the turn, and there are, therefore, only two balls left with which to score). The red ball, when potted, is returned to its spot, one's own ball is brought again into play from the 'D'. A player always has another stroke when he has scored. When he fails to score, his opponent goes into play. His total score for one turn is known as his 'break'. The record break of 4,137 was made by Walter Lindrum in 1932. An ordinary amateur player is very satisfied with himself if he makes a break of 50. There is no fixed total constituting a game. For professional matches, which last over a period of days, the total is normally 8,000–10,000 points. Short, amateur games are played for 100 up or any other total decided between the players.

A player makes his shot standing firmly on both legs and bending over the table to bring his eyes near to the line of the cue and ball.
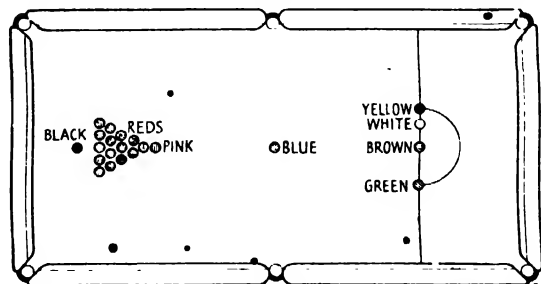
A SNOOKER TABLE AT THE START OF THE GAME

He rests the left hand and the tips of the fingers on the table, making a 'bridge' for the cue with the thumb. Then he holds the cue lightly and loosely with the other hand. He takes his aim and draws the cue backwards and forwards several times to ensure that it moves smoothly. Then he hits his ball, aiming to make it strike another ball at the exact place to right or left which will move it at the desired angle.

The French game of billiards has discarded pockets and consists solely of a 'carom' or cannon game. The Americans started by cutting out the side pockets and introducing an extra ball; but in course of time they adopted the French game.

3. SNOOKER POOL consists entirely of potting, and is a mixture of the old games of Pool and Pyramids. In Pool, played by any number of players, each player has a different-coloured ball, and each tries to pot the balls of the other players in a certain order (white, red, yellow, &c.). Each player puts an agreed sum of money into the 'pool', and the winner takes the pool as his prize. In Pyramids fifteen red balls arranged in a triangle or pyramid, the apex being on the pyramid spot (the pink spot in Snooker), and the base being nearest the top of the table. One white ball, started from the 'D', is played alternately by each player who must play it from where it has been left by the last player. The object is to pot the red balls and to leave the white ball in a place from which the opponent cannot score. In this, as in all games of billiards, a player continues to play until he fails to score.

In Snooker the pyramid of fifteen red balls and six coloured balls (yellow, green, brown, blue, pink, and black, valued respectively 2, 3, 4, 5, 6, and 7) are on the table, arranged as shown on the diagram, and the one white ball is played alternately by both players, as in Pyramids. The object of the game is to pot first a red ball and then a colour, then a second red and a second colour, and so on. Any colour may be potted, but a red must be potted first. Red balls, once potted, stay down; colours are replaced on the spot from which they started the game. When only colours remain on the table they have to be potted in the order of their value—first yellow and last black. The record break of 141 was made by Joe Davis in 1919.

JOE DAVIS PLAYING SNOOKER

When the white ball is left so close behind another ball that the player cannot take direct aim at the next ball to be struck (for example, behind a colour when a red ball must be struck), the player is said to be 'snookered', and he must try to reach his object by playing the white ball off a cushion. The penalties of the game are as follows: if the white ball enters a pocket off a red ball, or off a yellow, green, or brown, the player forfeits 4 points; but if it goes off a blue, pink, or black, the forfeit is the value of the ball —5, 6, or 7. If a player pots a colour when playing for a red, or at the end of the game pots the wrong colour, he also forfeits 4 points or the value of the ball potted—whichever is the higher.

Great players of billiards and snooker have been, among others, Edwin Kentfield (British billiards champion 1825-49); John Roberts, Senr. (British billiards champion 1849–70); Joe Davis (five times world's billiards champion and world's snooker champion for 20 successive years until his retirement in 1946); Tom Newman (six times world's billiards champion); and Walter Lindrum (present world's billiards champion). The chief professional and amateur events are: World's Professional Billiards and Snooker Championships; United Kingdom Professional Billiards ● Championship; British Women's Professional Billiards and Snooker Championships; English Amateur Billiards and Snooker Championships; British Women's and British Empire Amateur Billiards Championship; and of recent years a Boy's Snooker Championship of the British Isles.

● **4.** BAGATELLE is a minor game of the billiards type, played on a board 7 feet long and 21 inches broad, and built somewhat like a billiards table. Nine small ivory or composition balls and a cue are used, the game being to pot the balls into nine numbered holes arranged in a semicircle at the far end of the board. The name Bagatelle comes from a French word meaning 'trifle'; the word gave rise to the expression, 'a mere bagatelle', meaning a matter of no great weight. The game certainly dates back to as early as 1819.

BIRD-WATCHING is an occupation that has become increasingly popular and widespread over the past 25 years. To many it is far more than a pastime. Thousands of people, young and old, spend nearly all their spare time watching birds and keeping notes of all they see. Not only the country, but the parks, ponds, gardens, allotments, plots of waste ground, and even the built-up areas in and around towns can offer a surprising variety of bird life. Owls, hawks, woodpeckers, jays, and, among smaller birds, many different kinds of finches, warblers, wagtails, and tits are seen regularly in inner London; and few finer places exist for watching winter ducks, grebes, and gulls than London's reservoirs and river-sides. Sewage farms are favourite resorts of waterfowl and waders on migration. Mountain, moorland, and most of the marsh and coastline haunts all have their characteristic species of birds. The only equipment essential to the bird-watcher, apart from his pencil and note-book, is a good pair of field glasses—preferably a ×6 or ×8 magnification, —with a 30 or 40 mm. diameter object lens.

Bird-watching is above all an occupation for amateurs. However expert we may be, we watch birds chiefly for pleasure—for their colour and their song, for the interest of their behaviour and their surroundings. There are various aspects on which the bird-watcher may specialize. He may keep a note-book of the varieties of birds seen, which should include coloured drawings. Or he may take up census work, or struggle with statistical problems, plotting song periods and distribution records, time-tabling the arrival and departure of migrants, making graphs of egg clutch sizes or the weights of growing nestlings, noting preferences in diet, and investigating every aspect of bird economy. There are even tables of a bird's expectancy of life! Between those who watch birds solely for the joy of it and those who record particular details is a host of energetic bird observers. Each in his own way interprets what he sees of bird habits and behaviour: how the winter flock breaks up, how birds choose their homes and go about their courtship; how they take turns on the nest, hatch the young birds, feed them, and teach them to fly; all the threats and greetings, the feints, displays, and ceremonies, to say nothing of the squabbles, risks, and travels before the young bird is fully grown, and the whole cycle starts again. No two kinds of bird (and not always two individuals of the same kind) complete the circuit in precisely the same way.

Egg-collecting is illegal, the eggs of certain pests excepted—and it has little scientific value. It interrupts the life sequence of the birds and

BIRD-WATCHING ON THE YORKSHIRE COAST
P. Granett

has been partly responsible for bringing some of the rarer British birds almost to extinction.

When watching birds it is better to choose a likely place and keep still, more or less hidden, than to move about. Let the birds come to you instead of following them. Never make sudden movements or step unwarily over a skyline; and do not point. It is not your mere presence that frightens birds: they will get used to that. But for close work at nests a hide, made of sacking on a light frame with a few guys to hold it down, is almost a necessity. It should be moved up gradually day by day to within 6 or 8 feet of the site. It is an unwritten law that the welfare of the bird must come before the prospects of photography: she must not be kept off her nest too long, lest the eggs chill, or the chicks bake in the sun. Disturbance at the nest will endanger the brood. For nest photography an old plate camera is as good as any miniature, although a telephoto may be necessary for photographs at a distance (*see* PHOTOGRAPHY). Bird

photography is a tantalizing game, best learned from an old hand, although books on the subject are helpful. Sound-recording is a cumbersome and highly technical operation suitable for an expert such as Ludwig Koch, whose records of birds' songs are a valuable aid to bird study.

Amateur bird-watchers can make themselves useful in many ways: by investigating starling roosts, rookeries, and heronries throughout the country; by counting gannet colonies on ocean stacks and islets, and the breeding pairs of great crested grebes on inland meres and lakes; by studying the migrant waders on coasts and sewage farms all over the country; and by week-end vigils to watch for the arrival and dispersal of swifts. From intimate details of the family life of birds to such general matters as nest-building, hatching, and fledging periods, or roosting, flocking, and feeding habits, our knowledge of bird biology is based very largely on data supplied by amateurs.

More especially at migration times, the various

bird observatories are intensely active centres of bird study—Fair Isle and the Isle of May, Spurn Head at the Humber mouth, Lundy and Skokholm in the Bristol Channel, Scolt Head and other sanctuaries on or near the Norfolk coast. Many of these stations are manned by amateur bird-watchers who trap birds, ring them, and then release them immediately. Most of what is known about MIGRATION (q.v. Vol. II) and about sea-fowl comes from these station records and from the study of the ringed birds. The experimental duck decoy at Orielton, Pembrokeshire, and the goose grounds of the Severn Wildfowl Trust are similar ventures.

Bird-watching is sponsored by the British Trust for Ornithology and the Royal Society for the Protection of Birds. Both these bodies, the latter through the Junior Bird Recorders' Club, appeal for special information from amateurs. The Council for the Promotion of Field Studies holds intensive study courses at its Field Centres in all aspects of bird life.

See also Vol. II: BIRDS; ANIMAL LANGUAGE.

BIRDS, see CAGE BIRDS.

BISLEY, see RIFLE SHOOTING.

BLIND-MAN'S-BUFF, see HIDING GAMES.

BOAR HUNTING, see HUNTING, HISTORY OF.

BOARD GAMES. This type of game is played by moving 'men' or counters on a board—a kind of chart, marked out to a certain pattern. Many of the board games still played are variations of very ancient games, probably played originally on a chart scratched on the ground, with bones, pebbles, or fruit-stones as counters. Board games fall into two main groups: games in which luck plays a considerable part, the moves depending on the throw of DICE (q.v.), and games requiring skill only, the players working out their moves according to set rules, the most complicated of all being CHESS (q.v.). One of the oldest of the dice games is BACKGAMMON (q.v.), a game played in England at least as early as the 14th century, with its origin in the 'Twelve-line game', which the Romans are said to have learnt from the Greeks.

The best-known dice games are those which consist of a 'race' from one part of the board to

another, the players moving their counters along a prescribed route, suffering various set-backs and advances on the way. In Snakes and Ladders the players try to reach the top of the board by moving on numbered squares; but they must move downwards when they come to a 'snake' and upwards when they come to a 'ladder'. In the Horse Racing game the board is marked out like a race-course, with certain penalties and rewards at particular places on the course. In Ludo each player tries to get his four counters from one corner to the centre of the board; but if one player lands on a space already occupied by another, the first one must return to the beginning. The most complicated of all the many games of this type is Monopoly, one which had a great vogue in the 1930's.

Though it follows the same principle as the other games, it is not so much a racing game as a game of 'big business'. One player acts as banker, and the others each start with the same imaginary sum. The players, each represented by some such symbol as a little boot, ship, or motor-car, move round the board in the usual way. At intervals along the board there are squares marked out as 'property', varying greatly in value, and called after districts in London, such as 'Whitechapel Road' or 'Mayfair'. When a player lands on one of these, he may 'buy' it by paying its 'value' to the banker, who gives him a card representing the 'title deeds'. Any other player landing on this property must pay 'rent' to the owner according to its value. The properties are in sets, and when a player has completed a set, he may increase its value by building 'houses' on it (little

A GAME OF NINE MEN'S MORRIS
A marginal drawing from the *Romance of Alexander* (c. 1340)
MS. Bodl. 264, f. 112

The ROYAL Pastime of CUPID or Entertaining GAME of the SNAKE
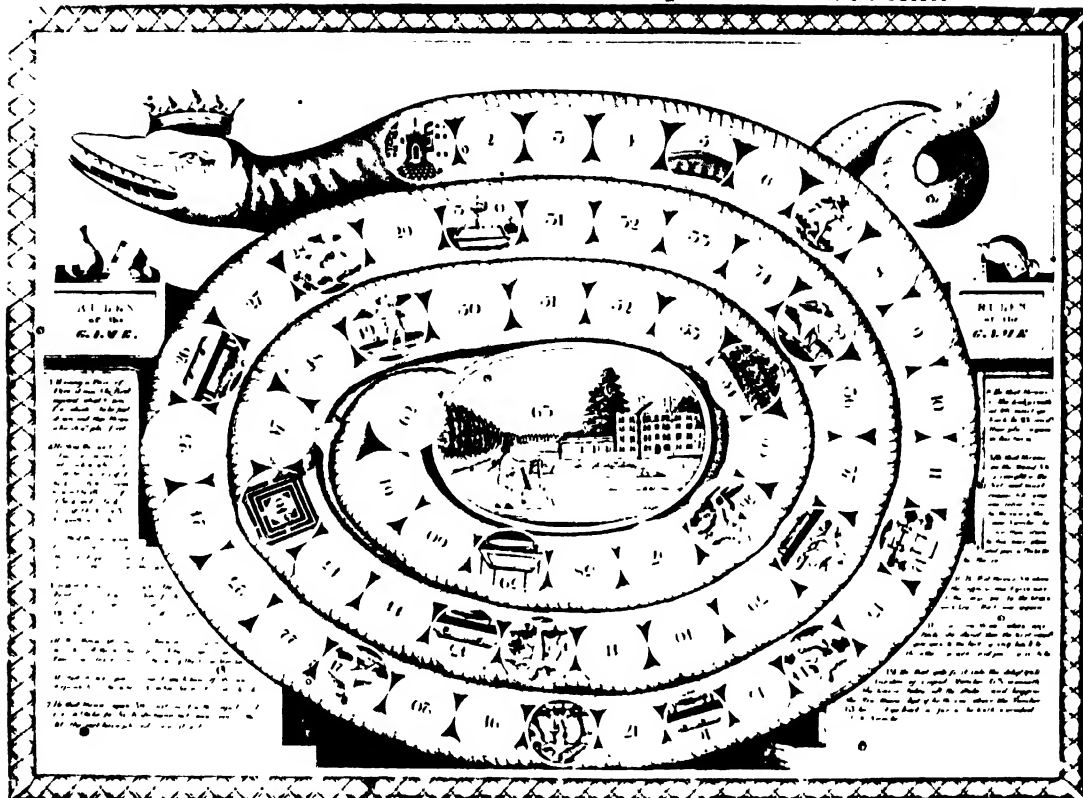
A FORERUNNER OF THE SNAKES AND LADDERS GAME
The pictures indicate hazards which are described in the text on each side. The game ends at No. 63, 'the delightful garden of Cupid', the first to get there winning the stake

wooden blocks purchased from the banker). Four houses entitle him to an 'hotel', which is still more valuable. If a player begins to run out of money, he may sell his houses and hotels and finally even 'mortgage' his property, receiving a lump sum from the banker but losing his rent. Some moves entitle the player to draw from one of two packs of cards in the centre, each card bearing some penalty or reward, such as 'Pay doctor's bill £10', or 'You have won £20 in a lottery'. When a player is bankrupt, he retires from the game; and the game ends when only one player remains solvent.

Board games of skill usually have as their object 'taking' the opponent's men, arranging the men in a certain pattern, or invading the enemy's territory. One of the oldest is Nine Men's Morris or Morelles, which combines the first two principles and is rather like a cross between Noughts and Crosses (see PAPER GAMES) and DRAUGHTS (q.v.). It was popular as early as the 14th century and is mentioned by Shakespeare in *A Midsummer Night's Dream*. It used to be played on the village green, the board marked out with a trowel on the turf, and the 'men' black and white pebbles, or sometimes small wooden stakes stuck in the ground, nine peeled and nine with the bark left on them. When a board is used, it is marked into compartments, as in Fig. 1. The two players take it in turns to place a man on any of the points of intersection on the board, the object being to place three men in a line. When a player achieves this, he is entitled to 'pound'—that is, remove one of his opponent's men from the board. When each player has had nine turns, all the men not already pounded are on
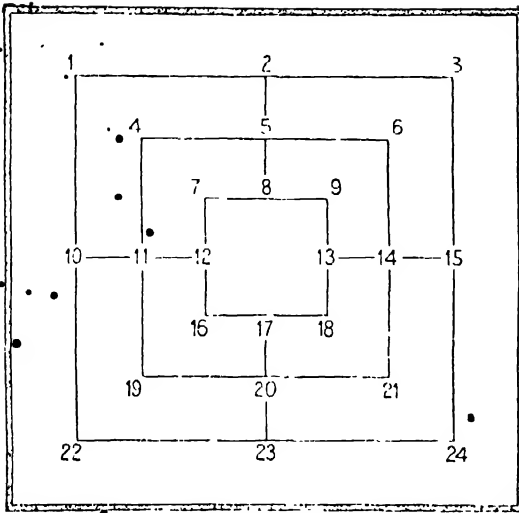
FIG. 1. A NINE MEN'S MORRIS BOARD

the board, and the game changes in character. The men can now be moved, the object still being to get three in a row, and the players still continuing to 'pound'. A man may be moved only to a vacant point of intersection next to his present position. Thus a man at 1 can move to 2 or 10; at 2 to 1, 3, or 5; at 21, to 14, or 20, and so on. When one player is reduced to three men only, he can 'hop' to any vacant place he pleases. The final struggle takes place when both players are 'hopping', the winner being the first to get his three in a row.

Peggotty, a very simple modern game on the Noughts and Crosses principle, is played by four players who take it in turn to stick coloured wooden pegs into holes in the board, the winner being the first to get five pegs in a row. The player must divide his attention between stopping his opponent's progress and arranging his own pegs.

In many games the object is to break through one's opponent's men into his territory by systematic moves. The old game of Fox and Geese has many versions; the most familiar is played on a draughtboard, one player having four 'geese' (white draughts) which he arranges in a straight line across the board, the other having the 'fox' (a black draught). The players take it in turns to move, the fox trying to break through the line of geese. Halma (from the Greek *hallomai*, 'leap') is a more complicated game played on a board of 256 squares, with

little wooden 'men' resembling the pawns at Chess. The board is placed diagonally, and in each of the corners is an area called the 'yard', consisting of 19 or 13 squares according to whether the game is played between two or four players (see Fig. 2). In a game between two players, only two opposite corners are used; if between four players, all four corners are used, and the players can play all against all or in partners. The object of each player is to get all his men into his opponent's yard, the first in being the winner. There are two kinds of moves: the single 'step', to an adjoining vacant square, taken either forwards, backwards, or diagonally; and the 'hop' or succession of hops which can be made over any man of either side who has an empty square on each side of him. The skill of the game lies in arranging one's own men so that they provide a hopping route (a 'ladder'), either straight or zig-zag, from one corner to the other, and in obstructing the route of one's opponent. Where two players are playing as partners, they help in providing each other with 'ladders'.

Solitaire is an old French game for one player, with many different versions, which is supposed to have been invented by a prisoner in the Bastille. It is played with MARBLES (q.v.) on a board with thirty-three hollows (see Fig. 3). In the usual version marbles are placed in all but one of the hollows, and the object is to take marbles by jumping over them, as in DRAUGHTS
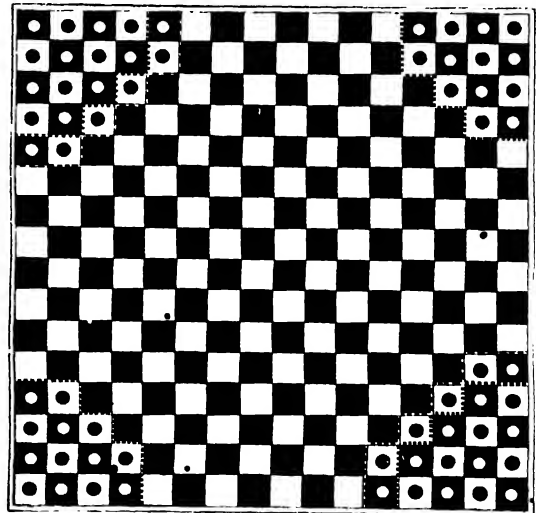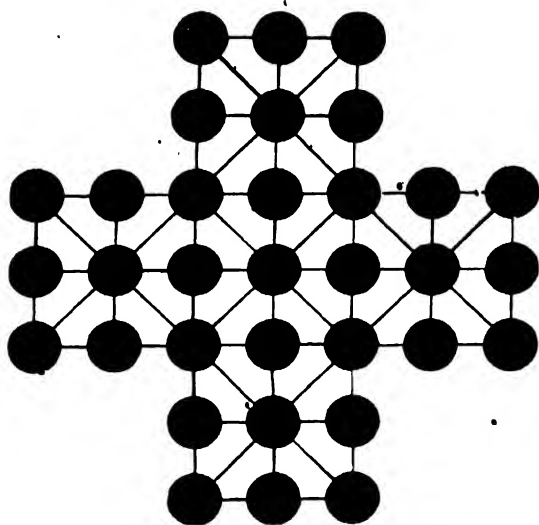

FIG. 2. A HALMA BOARD

FIG. 3. ARRANGEMENT OF HOLES ON A SOLITAIRE BOARD

(q.v.), until only one marble is left, which must be in a given hole. A move can be made either horizontally or vertically, but never diagonally. Solitaire presents many problems which can be worked out by the single player.

See also BACKGAMMON; CHESS; DRAUGHTS, CARD GAMES; CASINO; GAMBLING.

BOAT-RACES. 1. EARLY HISTORY. The earliest form of boat-racing in England took place in the early 18th century, and consisted of competitions in sculling in single-oared boats between professional Thames watermen. Travel by river was much more common than it is to-day, and the Thames watermen depended for their livelihood on their strength and swiftness. The earliest-known formal race between them, which has survived to this day, and is the oldest of all our modern sporting events, is the race for Doggett's Coat and Badge, instituted in 1716 by Thomas Doggett, an Irish comedian. On the morning of 1 August 1716 he set up on London Bridge a placard which read as follows:

This being the day of His Majesty's happy accession to the throne, there will be given by Mr. Doggett an Orange Colour Livery with a Badge representing Liberty to be rowed for by six watermen that are out of their time within the year past. They are to row from London Bridge to Chelsea. It will be continued annually on the same day for ever.

Nowadays the race takes place under the auspices of the Fishmongers' Company over the same course (4 miles 5 furlongs), and is rowed

for money prizes, the winner also establishing his right to the Coat and Badge.

Another famous sculling race is that for the English championship, which began in 1831, from Westminster to Putney. Since 1847 it has been rowed over the Putney to Mortlake course. In the middle of the last century watermen's regattas were not uncommon, and included events for pairs and fours; nowadays they confine themselves mainly to sculling, at which they excel.

By contrast, racing in many-oared boats has tended always to be an amateur sport; its origins go back to the days when great noblemen kept barges on the Thames and vied with one another in the speed and splendour of their liveried oarsmen. It developed as a sport by way of the schools at Eton and Westminster, where boating was carried on, at first under some official disapproval, from at least as far back as the middle years of the 18th century. The early boats had four, six, eight, or ten oars; the races known as Upper Sixes at Eton were not rowed in eight-oared boats till 1848. Likewise at Westminster in 1813–14 the King's Scholars rowed in a six-oared boat called a 'Fly', and eight-oared boats only came into general use there in 1848.

It seems that Eton and Westminster were rowing races against each other in the early years of the 19th century. In 1821 it is recorded in the Westminster Water Ledger that the school beat the Eagle, one of the leading London clubs, in a 'short pull' from Battersea Church to Putney Bridge, a distance of nearly 2 miles. From Eton and Westminster the practice spread to the Universities: the first eight-oared boats were seen on the river at Oxford in 1815.
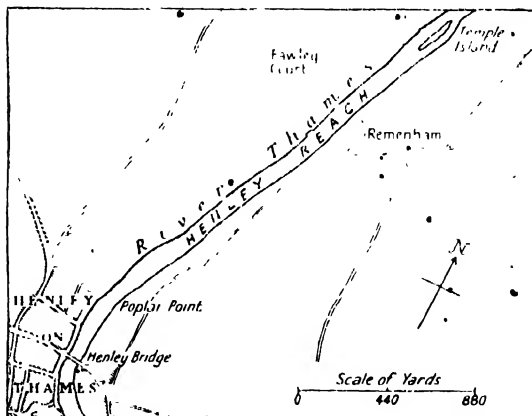
THE HENLEY COURSE

DOGGETT'S COAT AND BADGE

The scene at London Bridge before the start of the race, which extends from London Bridge to Chelsea. *The Times*

2. BUMPING-RACES. About $3\frac{1}{2}$ miles downstream from Oxford there was, and still is, an inn to which on summer evenings these early crews rowed for supper. On their return journey several eights would congregate in Iffley Lock. When the lock-gates had opened, the stroke of the first crew out of the lock would stand in the bows, boat-hook in hand, run down the gangplank placed across the thwarts of his boat, drop into his seat, and take his crew away as fast as possible. The remaining crews would follow suit in turn, each trying to overtake and 'bump' the one immediately in front. This was the origin of bumping-races. As the numbers of crews increased, the lock was unable to contain them all, so that boats started above the lock at agreed distances apart, much as they do to-day. At Cambridge, the birth of rowing seems to have occurred almost simultaneously. By 1826 the Trinity and St. John's boats were going out fairly regularly, and two years later most of the colleges had their eights.

Nowadays bumping-races are held at both Oxford and Cambridge, the college eights competing with each other on a series of consecutive days in the summer. 'Eights Week' at Oxford and 'May Week' at Cambridge are great social occasions in the life of the university. There are also inter-college races for the less experienced oarsmen in March—races known as Torpids ('Toggers') at Oxford and Lent Races at Cambridge. In bumping-races the boats are organized in divisions of thirteen or more boats, each division racing separately. The bottom boat of the 1st division also rows as top boat of the 2nd division, and so on. The boats are lined up one behind the other at intervals of about $1\frac{1}{4}$ lengths, in the order in which they finished up the year before. They are started by a gun, and each tries to overtake and 'bump' the boat ahead. When a bump is scored the two boats draw into the bank to clear the way. It sometimes happens that the boat behind rows over the gap to overtake the boat three ahead of it—thus making a 'double bump'. Bumper and bumped change places in the order of starting on the following day. The college at the top of the first division is said to be 'Head of the River'. At Oxford a challenge cup, presented in 1862 by the late Mr. G. Morrison, is awarded.

3. REGATTAS. Apart from bumping-races at schools and universities and the OXFORD AND CAMBRIDGE BOAT-RACE (q.v.), most rowing-races are organized in 'regattas'. The word was originally Italian, meaning 'struggle for mastery', and was first applied to some gondola races held on the Grand Canal at Venice (*see* REGATTAS, SAILING). The most famous of all rowing-regattas is that at Henley, which lasts 4 days, and finishes on the first Saturday in July.

A BUMPING RACE

Merton about to bump Worcester as the Second Division crews draw alongside the college barges in the Oxford University Summer Eights, 1918. *The Times*

The Henley Regatta was instituted in 1839. It was agreed that a challenge trophy—a silver cup to the value of a hundred guineas—should be rowed for annually by amateur crews in eight-oared boats. It is the ambition of crews all over the world to win that trophy, now valued at over £2,000. On eight occasions the cup has gone overseas—three times to Belgium, twice to America, and once each to Australia, Switzerland, and Germany. The Leander Club (founded at Henley in 1817 for leading amateur oarsmen) has won it a number of times, and so have the Metropolitan clubs, particularly the London and the Thames Rowing Clubs.

The first Henley Regatta in 1839 was made a colourful spectacle by the gay uniforms of the rowing clubs, who wore jerseys, caps, and rosettes of various bright colours. The Etonian Club, for instance, were dressed in white guernseys with pale blue facings and sky-blue rosettes. Now that Henley Regatta has become a fashionable social event the gay dresses of the ladies add to the brilliance of the scene. Since 1851, when Prince Albert attended and agreed to become patron, the regatta has been known as Henley Royal Regatta.

In the early years of the Regatta the course ran from above Temple Island and finished at the Bridge. The bend in the river at Poplar Point, about 400 yards from the finish, gave too great an advantage to the boat on the Berkshire side, so in 1886 the course was changed to start opposite the bottom of Temple Island, and finish before Poplar Point is reached (*see* diagram, p. 74). It has retained its original length of about 1 mile 550 yards, and is marked by booms on either side. The open events are: the Grand Challenge Cup and the Thames Challenge Cup, for eights; the Stewards' Challenge Cup and Wyfold Challenge Cup, for fours; the Silver

Goblets and Nickalls Challenge Cup, for pairs; the Double Sculling Challenge Cup and the Diamond Challenge Sculls. The Thames Cup for eights and the Wyfold Cup for fours are second-class events; a crew can decide whether to enter for the Grand or the Thames, but may not enter for both. The closed events, confined to crews from schools and colleges of Great Britain, are the Ladies' Challenge Plate, for eights, and the Visitors' Challenge Cup, for fours. The Double Sculling event was added to the programme in 1916. In the same year, as an additional incentive to young oarsmen, the Stewards added another eight-oared race, called the Princess Elizabeth Cup, confined to schools.

Other regattas of less importance are held at Marlow, Kingston, Walton, Molesey, and Reading; the Metropolitan regatta is rowed on the Thames tideway Provincial regattas are held at Worcester, Bedford, Chester, Durham, Burton-on-Trent, and other places. They are normally held under the rules of the Amateur Rowing Association, to which clubs are affiliated, and which acts as an unofficial arbiter to see that the racing is strictly amateur. Apart from regattas there are races at schools and various 'Head of the River Races', the most celebrated of which, on the Thames, is rowed over the reverse university boat-race course generally on the afternoon of the same day. There is also an amateur sculling match for a trophy known as the Wingfield Sculls, rowed over the Putney to Mortlake course.

4. BOAT-RACING IN OTHER COUNTRIES. In the U.S.A. rowing has been popular since the beginning of the last century. As in Britain, racing began between professional watermen, but these races declined in the seventies, partly because of the betting and suspicions of foul play to which they gave rise. The foundation of the New York Castle Garden Boat Club in 1834 was the start of amateur rowing; the National Association of Amateur Oarsmen (corresponding to the British Amateur Rowing Association) was founded in 1872. Rowing at American universities dates from 1852, when the Harvard-Yale race was instituted. Nowadays rowing has become a very popular sport at most American universities and many schools as well, and American schoolboy crews have won the Thames Cup at Henley. Its popularity is also spreading to South America. In the British dominions,

THE FINISH NEAR POPLAR POINT OF THE HENLEY REGATTA COURSE. *G. Bushell and Son*

particularly in Australia and Canada, rowing flourishes. In Australia inter-state and inter-university races are annual fixtures; since 1893 the six state universities compete for the Oxford and Cambridge Cup, presented by Old Blues in that year. Canada holds a Royal Canadian Henley Regatta annually at Port Dalhousie. Both dominions have won many events at Henley.

Many European countries have also become nurseries of oarsmen in recent years, notably Germany, Switzerland, Austria, Belgium, Holland, Italy, and France. Henley may almost be regarded as an international festival; but since 1908, when rowing events were introduced into the OLYMPIC GAMES (q.v.), these provide the greatest occasion for international competition. International rowing is organized by the Fédération Internationale des Sociétés d'Aviron, to which national bodies such as the British Amateur Rowing Association are affiliated, and which holds a European championship regatta every year.

See also ROWING.

BOATS, *see* SAILING BOATS; MOTOR BOATS; ROWING; PUNTING; CANOEING.

BOMBARDON, *see* BRASS INSTRUMENTS, Section 5.

BOOK-COLLECTING. The collecting of books, that is, the pursuit of rarities, became widespread only under the Tudors. After the Reformation, Archbishop Parker and Sir Robert Cotton set about rescuing such books as survived

the plundering of the monastic libraries. It is to the efforts of such men as these that some of the treasures of modern collections are due. During the 17th century the custom of holding public auctions of rare books was introduced into this country from the Netherlands. Another factor that promoted book-collecting was the influx of fine bindings, executed by Italian and French craftsmen in the years following the Renaissance. By the 18th century there were many fine privately owned collections, some of which later were bequeathed, sold, or presented to university or public libraries.

The book-collector usually works on a definite principle of selection. He may admire a particular period of literature: or his interest may be in fine typography, and he will be led to collect examples of the great printers of the past, and perhaps of modern private printing presses. Or it may be that his enthusiasm is stirred by some specific type of literature: for example, one present-day collector has amassed a fine range of children's literature, including stories, manuals, and instruction sheets. Such a pursuit as this puts posterity in the collector's debt, for without his enterprise many valuable records of the past would vanish. Examples of magnificent collections are the Earl Spencer Collection, which was purchased for the John Rylands Library in Manchester; and that of William Beckford, which fetched £89,200 at auction. Book-collecting has not been confined to the rich. An 18th-century book-hunter named Wilson—or, more colourfully, 'Snuffy Davy'—bought a quarto volume for twopence at a Dutch bookstall, and resold it to a London bookseller for £20. It finally passed into the Windsor Library at a price of £370. It was *The Game of Chess*, printed by William CAXTON (q.v. Vol. V), the first English printer.

Collectors seek first editions, preferably uncut and in their original bindings, with the original title-page. They seek them everywhere, but in particular in booksellers' catalogues and at auction sales. Nowadays the traffic in old books has been reduced to a system, and the market is crowded with experts. Even the pavement hawker is liable to know a rarity when he sees it; so that startling 'finds' are not likely to be picked up for a copper or two on the book barrow—at least, not in London, though remote districts offer more chance. And, in any case, even the humblest collector can still take joy

in buying pleasant editions of his favourite authors, and the pleasure is not lessened if they should appreciate in value, as they very likely may.

See also COLLECTING.

See also Vol. IV: BOOKS, HISTORY OF; BOOKS, CARE OF.

BOTANICAL GARDENS. We are inclined to think of Kew Gardens and other such places as having been designed mainly for the enjoyment of the public; but in fact their real purpose is to help the scientific study of plants. This is a comparatively recent study, and there were no Botanical Gardens until the 14th century, when the first one was founded in Italy. At this time plants were studied mainly for their value as medicines, drugs, and salves, and also as herbs for kitchen use, especially for disguising the unpleasant taste of much of the stale meat eaten in the winter months. In the 16th and 17th centuries many botanical gardens were laid down in towns and universities and even by rich private individuals. The Royal Garden was founded in Paris in 1597, originally, it is said, to improve the bouquets carried at court. In 1635, however, Chairs of Botany and Pharmacology were founded, and this garden became the famous 'Jardin des Plantes', now known to botanists all over the world for its collection of rare and beautiful plants. The oldest British botanical garden is at Oxford, founded in 1632. Edinburgh also possesses an outstanding garden founded at the end of the 17th century. From the beginning of the 18th century, as botany became more and more prominent as a study, the plants in the botanical gardens were grown for the sake of their rarity and interest rather than for their use. The largest and most complete botanical gardens are those of Kew, founded in 1730, which contain an unrivalled collection of rare plants from all over the world. America has many excellent Botanical Gardens and also Arboretums—parks of rare trees scientifically arranged. The Arnold Arboretum in Boston compares with Kew for size and completeness. A good Botanical Garden possesses glass-houses, a museum, a library, laboratories for dissection and research, a 'herbarium' for drying specimens, and probably lecture rooms. In a large garden such as Kew there is infinite variety to be found—Alpine Gardens, ponds, clusters of rare trees, and enormous palm houses. It is no wonder that botanical

BLOSSOM IN KEW GARDENS
The Times

gardens attract large crowds of holiday-makers, who 'go down to Kew in lilac time', not to study botany but to enjoy the beauty of the surroundings.

See also Vol. II: PLANTS.
See also Vol. VI: GARDENS.

BOWLS. This is one of the oldest of British national games. According to a manuscript in the Royal Library at Windsor, it was played in the 13th century, and the Old Bowling Green at Southampton was in use by 1299. King Henry VIII was an enthusiastic bowler, and there is the well-founded tradition that the defeat of the Spanish Armada in 1588 was preceded by Drake's famous game on Plymouth Hoe. The laws of bowls were settled by King Charles II. After a period of unpopularity, bowling was again legalized in the Gaming Act of 1845.

The bowling-green is a lawn of the finest turf, often 42 yards square, surrounded by a small ditch and bank. It is divided into 'rinks', each not exceeding 21 feet in width, with a numbered pin in the centre of the two opposite banks. Thus five or six rinks are often formed on one green, each divided by a strand of twine. The game consists of rolling bowls or 'woods' at a small white ball called a 'jack', which is rolled on to the green at least 20 yards distant from the bowlers. A match may be between one, two, three, or four players on each side—a game with four players being called a 'rink'. In 'singles' and 'pairs' each player has four bowls, or 'woods', in 'triples' only three woods, and in a 'rink' each of the eight competitors bowls two. The wood is made from a heavy wood known as *lignum vitae*, and is shaped by machine so that it is not quite round, but has a bias when bowled. On a good green, a wood may 'draw' (or swerve) about 6 feet on a 30-yard course. The bowler stands on a small mat to bowl. His object is to

BOWLS
A player taking up his position for bowling

bowl their woods, for the last bowls may be used effectively for pushing out of the way a winning wood of the opponents.

In addition to local bowling clubs and district associations, there are county bowling associations throughout Great Britain, the English Bowling Association County Championship being open to all affiliated county associations. Each county is represented by six rinks of four players, and the winning county holds the Middleton Cup for one year. International competitions are organized under the International Bowling Board, which consists of members representative of the National associations of England, Scotland, Wales, Ireland, South Africa, Australia, New Zealand, Canada, and the U.S.A.

In Lancashire and the North of England most bowling greens are 'crowned'—that is, they slope from the centre to the ditch. This game is governed by the Crown Green Amateur Bowling Association and the Lancashire Professional Bowlers Association.

The indoor game of bowling played in a bowling alley, also a very old game, is more like SKITTLES (q.v.) than lawn bowls, and is described in the article on that game.

make his wood come to rest against or near the jack. The skill in the game lies largely in being able to push away the wood of an opponent or to make use of the bias of one's own wood to make it curve round that of the opponent and come to rest nearer the jack. When all woods have been bowled, a point is scored by the player or side for each wood resting nearer the jack than the opponent's nearest wood, and one 'end' or 'head' is said to have been completed, and the game is played again from the other end of the rink. Twenty-one ends complete a match (or twenty-one points in a singles game), the side with the highest score winning.

In a 'rink' game the four players on each side are numbered 1, 2, 3, and 'skip', who is captain of the team and, until his turn comes to play, stands by the jack to direct the others just where to aim. The jack is bowled by the side which wins the toss, and is then 'set' by the skip at the distance where it has stopped, but in the centre of the rink, making either a 'long' or a 'short' jack. Player No. 1 bowls the first wood, and this is followed by the first wood of his opponent. Each of these players then bowls his second wood. No. 2s bowl next, in the same order, followed by No. 3s. The skips are the last to

BOXING. The rules which now govern boxing were issued by the British Boxing Board of Control in 1929. For professional championships the ring is from 14 ft. to 20 ft. square and the gloves weigh 6 oz. Fifteen rounds of three minutes duration are fought, with a minute interval between each. The bout is won by a 'knock-out'—a blow to the chin, heart, or solar plexus which knocks out the opponent for not less than ten seconds—or a boxer may win on 'points', which are scored for the number of blows or style of fighting. The winner of each round is given 5 points, the loser whatever proportion to this total he has earned. Points are scored for clean hits with the closed glove of either hand, and for skilful defensive work. Where two men are otherwise equal, the attacker benefits. Each boxer has a second whose duty it is to look after him between rounds, cooling him with a towel, sponging his face, and giving him advice – it is an old boxing saying that a good second is half the battle.

The Amateur Boxing Association has rather modified rules: the ring is 12 ft. to 16 ft. square, and the number of rounds is usually three. The

gloves weigh 8 oz. There are junior categories for boys between 14 and 15½ years; in these the rounds are a minute and a half in length, with a minute's interval between each. Intermediate boxers fight rounds of two minutes each. The weights range from 6 stone in the first to 11 stone in the intermediate class. There is only 7 pounds difference between each weight, no boy being expected to box an opponent of more than half a stone heavier than himself. The A.B.A. organizes Youths' Championships and Schoolboys' Championships, for which the country is divided into districts.

• At the start of a fight the opponents shake hands. Each boxer then stands ready for action with the left toe pointing at his opponent and his right foot behind, and with the weight balanced on both feet to give a firm base for manœuvre. The left hand is forward, level with the shoulder; the right crosses the body, guarding the chin and ready to flash out in support of the left hand. The vulnerable chin should be backed into the left shoulder.

There are six attacking blows. The straight left—said to beat the world—is shot straight out with the weight of the body behind it. The left hook, generally more severe but harder to place, is made with the bent arm to the 'point' (jaw), the ribs, or the 'mark' (pit of the stomach). To manœuvre the opponent's guard away from the target, the boxer may feint by flicking his left towards the nose or making as if to sink a right swing into the ribs. An uppercut—a hook delivered from below upwards—may be used when the opponent is dashing in to attack with both hands. Right-hand punches are similar, though boxers rarely lead with the right, for this arm has farther to travel than the left and so comes into play less frequently. Half the effectiveness of a straight right comes from its being a surprise. The 'one-two' punch is a left lead followed immediately by a right-hander to the jaw.

The best defence is counter-attack. 'Stopping' – the thrusting out of the piston-strong, straight left– can hold an opponent who is dashing in. Blows may also be 'blocked' by the glove or 'guarded' by being deflected by glove or arm, and a counter-punch delivered as the man comes in. Movement is very important in defence—side-stepping, ducking, moving out of distance, or 'slipping' (sliding the head to one side so that the punch glances past it).

When boxers 'mix it'—get to close quarters—

manœuvre must often be discarded in favour of whirlwind in-fighting. Then the boxer tries to slip in under his opponent's arm to get the coveted inside position, whence he can bang away with short arm punches, directed chiefly at the body. The best defence against this 'boring-in' type of fighter is to keep him at a distance by quick movement, and propping him off with a straight left. • If he does pen his opponent in a corner, there is little the latter can do but crouch and 'smother'— protect head and body with gloves and forearms – until he is given a chance to escape.

The following infringements of the rules disqualify a boxer: hitting below the 'belt' (i.e. the navel); hitting with the open glove, with the inside or 'butt' of the hand, or with the wrist or elbow; hitting on the back of the head or neck, or over the kidneys; hitting an opponent when he is down; holding, butting, shouldering, wrestling or 'lying on' an opponent (resting head or body against him); holding his arm or glove with one hand, while punching with the other; tripping, or kicking; making unfair use of ropes or falling without receiving a blow.

BOXING, HISTORY OF. According to Greek legend the first famous boxer was the minor Greek deity Pollux, close on whose heels, according to some authorities, came Erix, a son of Venus, who knocked out all comers with the *caestus* (knuckle-duster) until he was so foolish as to challenge Hercules, by whom he was killed in mortal combat. The ancient Greeks were the first to stage competitions for fist-fights, and a

championship belt was awarded at their festivals and public gatherings. In British history boxing was one of the earliest sports. It formed part of the physical training exercises of the army of King Alfred; while Richard III was reputed to have excelled at fist-fighting.

Boxing as we now know it has a record going back little more than 200 years. The sport, originally called prize-fighting, grew up in England. The first champion, James Figg, was a past-master, not only of boxing with the bare fists, but also of the foil, the back-sword, and the cudgel. He would hardly have been recognized as a boxer by modern standards, for, like all the pugilists of his time, he disdained footwork. He stood his ground, parrying blows with his arm, and only departed from these tactics when he grappled his man round the waist and flung him in a heap. The first rules were drawn up in 1743 by Jack Broughton, the inventor of boxing-gloves (though these were not worn in serious contests till nearly a century and a half later). In those days a round ended with a fall, and the fight was lost if the second could not bring his man up to scratch within half a minute of being knocked down. The rules were revised in 1838 in order to make the contests less dangerous. For the first time it was expressly stated that hitting below the belt, kicking, biting, and gouging were not allowed.

Many of those great knuckle-fights were interminable and gruelling affairs. One of the longest on record—a bout between James Kelly and Jonathan Smith outside Melbourne in 1885 —lasted 6 hrs. 15 min. Sixty years earlier, Jack Jones had beaten Patsy Tunney after 276 rounds in a Cheshire meadow. No boxers to-day would offer us the ludicrous spectacle presented in Dover, Canada, by Coburn and the great Jem Mace, whose contest lasted over three hours, during the last hour of which hardly a blow was struck. The fight was declared a draw!

Tom Sayers and Jem Mace were the greatest boxers of the first half of the 19th century. Sayers, 5 ft. 8 in. and a middle-weight, fought Tom Heenan, the 6 ft. 2 in. American heavy-weight, for more than forty rounds. Throughout most of the battle he had but one arm, his right having been injured early in the fight. The American finished so badly blinded that he knocked his second head over heels in the last round. A contributor in *The Cornhill Magazine*,

believed to be Thackeray, summed up the occasion by pointing out that fighting was illegal, and that the Queen ought to send Tom Sayers to Clerkenwell Prison for a month —and knight him when he came out! Jem Mace visited America and Australasia, and in Larry Foley's saloon in George Street, Sydney, helped to found the school of fighters from whom the great champions of to-day are directly descended.

The adoption of the Marquess of Queensberry Rules for glove-fighting in 1867 did much to refine the crude sport which had begun in the saloons of 'Frisco, in the dockyards of Texas, or in the steaming, gas-lit back rooms of the East End of London. In Texas Jack Johnson came to the fore by being the survivor of half a dozen negroes tossed together into a ring with instructions to fight it out till one was left standing.

As fist-fighting became a thing of the past and glove contests were fought straightforwardly and with decency, the sport, during the last 20 years of the 19th century, became better organized. Today boxers are divided into ten categories by weight, and fight only men of their own category. The maximum weight for each is:

Fly-weight	.	.	8 stone
Bantam	.	.	8 stone 7 lb.
Feather	.	.	8 stone 13 lb.
Light	.	.	9 stone 6 lb.
Light-welter	.	.	9 stone 13 lb.
Welter	.	.	10 stone 7 lb.
Heavy-welter	.	.	11 stone 2 lb.
Middle	.	.	11 stone 11 lb.
Light-heavy (cruiser)			12 stone 10 lb.
Heavy	.	.	Over 12 stone 10 lb.

The National Sporting Club was founded in 1891 and came to be regarded as the head-quarters of the sport, especially after the Lonsdale Belts were first given to national champions at all weights in 1909. The rules under which fights are conducted to-day were issued by the British Boxing Board of Control in 1929.

Yet, in spite of the pre-eminence in the early days of boxing of the National Sporting Club, the great boxers of the world, from the time international contests were first regularly instituted, were more often American than British. Bob Fitzsimmons was the only British-born heavy-weight champion. Born in Cornwall, he

RULES

TO BE OBSERVED IN ALL BATTLES ON THE STAGE

I. THAT a fquare of a Yard be chalked in the middle of the Stage; and on every frefh fet-to after a fall, or being parted from the rails, each Second is to bring his Man to the fide of the fquare, and place him oppofite to the other, and till they are fairly fet-to at the Lines, it fhall not be lawful for one to ftrike at the other

II That, in order to prevent any Difputes, the time a Man lies after a fall, if the Second does not bring his Man to the fide of the fquare, within the fpace of half a minute, he fhall be deemed a beaten M in

III. That in every main Battle, no perfon whatever fhall be upon the Stage, except the Principals and their Seconds; the fame rule to be obferved in bye-battles, except that, in the latter, Mr Broughton is allowed to be upon the Stage to keep decorum, and to 'fift Gentlemen in getting to their places, provided always he does not interfere in the Battle, and whoever pretends to infringe thefe Rules to be turned immediately out of the houfe. Every body is to quit the Stage as foon as the Champions are ftripped, before the fet-to

IV. That no Champion be deemed beaten, unlefs he fails coming up to the line in the limited time, or that his own Second declares him beaten. No Second is to be allowed to afk his man's Adversary any queftions, or advife him to give out.

V. That in bye-battles, the winning man to have two-thirds of the Money given, which fhall be publicly divided upon the Stage, notwithftanding any private agreements to the contrary.

VI That to prevent Difputes, in every main Battle the Principals fhall, on coming on the Stage, choofe from among the gentlemen prefent two Umpires, who fhall abfolutely decide all Difputes that may arife about the Battle, and if the two Umpires cannot agree, the faid Umpires to choofe a third, who is to determine it

VII. That no perfon is to hit his Adverfary when he is down, or feize him by the ham, the breeches, or any part below the waift. a man on his knees to be reckoned down

As agreed by feveral Gentlemen at Broughton's Amphitheatre,
Tottenham Court Road, Auguft 16, 1743.
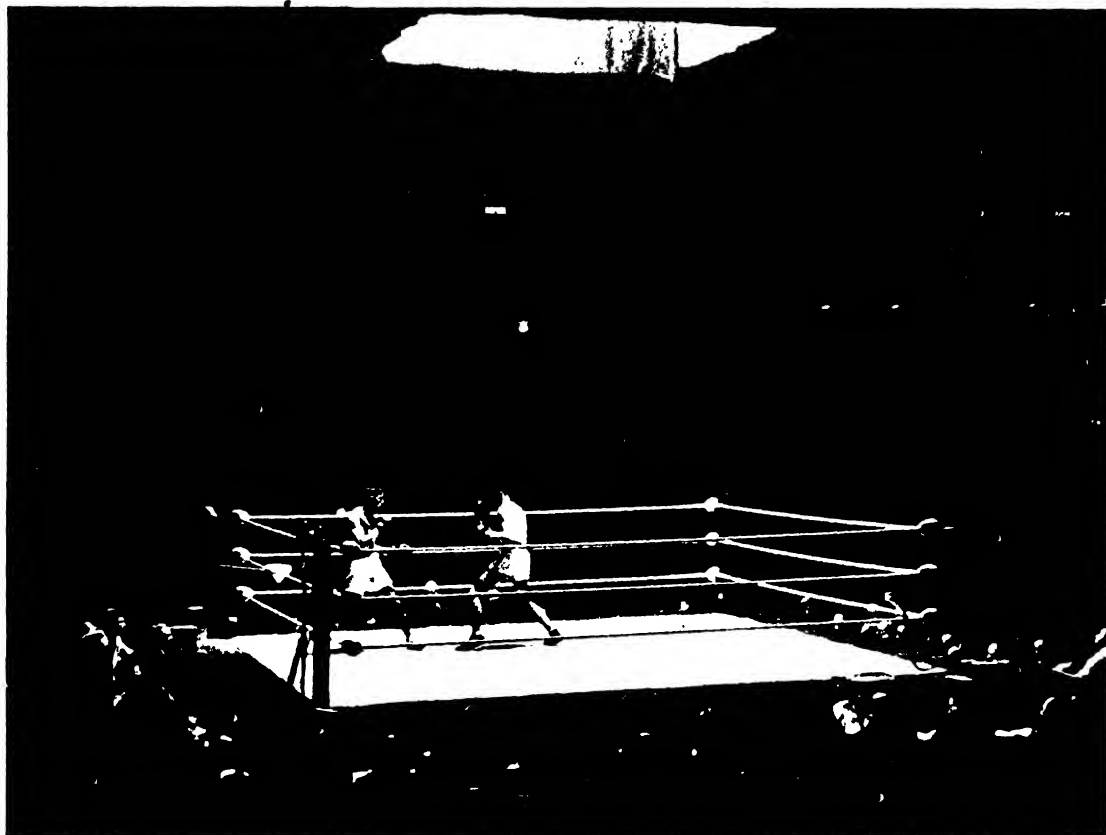
A FIGHT IN AN INTERNATIONAL BOXING TOURNAMENT AT THE EMPIRE POOL, WEMBLEY
The British and French boxers are sparring for an opening. *Picture Post*

learned to box as a blacksmith in New Zealand, and went to America in 1896 to win the title at the age of 34. Of the American champions, Jack Johnson, a Negro, held the title from 1908 to 1915, Jack Dempsey from 1919 to 1927, when he lost it to Gene Tunney. Joe Louis, a Negro, was only once beaten —by the German, Max Schmeling, whom he defeated in the return match in one round. He retired in 1948 after defending the world title on twenty-six occasions.

The only British light-weight champion was Freddie Welsh, who won the title in 1912. He was born in Wales, but learnt most of his boxing in America. He was not a heavy puncher but an ingenious defender, and the subtlest of modern in-fighters. Jimmy Wilde was also a Welshman. Weighing under 7 stone, he fought some 400 fights against all comers, and lost only four of them. He held the world's fly-weight title for longer than any other champion — 1916-23. He had a perfectly timed punch that could drop a heavy-weight—hence his nickname 'The ghost with a hammer in his hand'.

The American Negro 'Homicide' Henry Armstrong is unique in having held simultaneously the feather, light, and welter-weight championships of the world. Shortly before the Second World War he came to England and defeated the British welter-weight champion.

To-day Britain and America no longer have a monopoly of champions. The French, dropping their special form of boxing, *la savate*, in which kicking was allowed—took up boxing 6 or 7 years before the First World War. Shortly after the end of it they produced a couple of world's champions: Georges Carpentier, cruiser-weight, and Eugene Criqui, feather-weight. Battling Siki, the Negro who succeeded Carpentier, was

also a French national, and Charles Ledoux was one of the greatest feather-weights of his age. After that came Marcel Cerdan, an imposing middle-weight. Spain produced a Basque wood-cutter called Paolino Uzcudun, and a bantam champion named Balthazar Sangchili. Italy gave us the gigantic Primo Carnera. Germany found Schmeling and others. The Panama Republic contributed a wonderful little fighter in Al Brown, while the Philippines produced the fly-weight, Small Montana. The chief reason why the sport is attracting so many aspirants is that fortunes can be won by the champions within a few years. Tunney received nearly £200,000 for a single fight, and Joe Louis has made altogether well over half a million pounds in the ring.

Looking back over the two centuries, it is fair to say that the improvement in the status of boxing has produced results which are almost wholly good. The modern champion is a more intelligent person and a better citizen than the typical pug of the shady past. The modern style has far more graces, far more artistry about it than the crude sport of old times, though this did produce men who made up in brawn and heart what they lacked in skill and speed.

See also BOXING, WRESTLING.

BOYS' BRIGADE, THE. This, the oldest of the national organizations for boys in Britain, was founded by Sir William A. Smith in 1883. Since then, it has spread throughout the British Isles and to twenty-three countries overseas, and has given to thousands of boys an all-round training. In 1948 the total membership in Great Britain was 165,016.

The object of The Boys' Brigade is "The Advancement of Christ's Kingdom among Boys, and the promotion of habits of Obedience, Reverence, Discipline, Self-Respect, and all that tends towards a true Christian Manliness'. The movement is not confined to any particular religious denomination, race, or colour, and has no political or military association of any kind.

The local unit is known as a 'Company', and every Company is connected with a Church. A Company consists of thirty or more boys, sub-divided into squads, each under a senior boy as an N.C.O. The Company is led by men called Officers appointed by the Church — all

voluntary workers, most of them having served in the Brigade as boys. The foundations of a Company are the Company Bible Class and the Drill Parade—but the programme does not end there. The B.B. member is often a keen sportsman and takes part in football, cricket, swimming, athletics, and gymnastics. The companies have club-rooms with libraries, and there are opportunities for dramatics, first aid, hobbies and handicrafts, signalling, seamanship, map reading, fire service, and brass, bugle, or pipe bands. In fact, every kind of boy can find scope for his interests. Probably the greatest feature of all B.B. outdoor activities is camping. As a pioneer in this activity the B.B. is famous, and its camps provide a fine holiday for thousands of boys every year. Training and other activities are bound up in a graded scheme of badges and certificates. From the time a boy joins a Company until his discharge on reaching the age-limit as a full and working member of his own Church, he can progress each year through the badge scheme.

Uniform consists of a simple equipment of cap, belt, and haversack worn over the ordinary clothing. Each boy pays for his own uniform and, by making a small weekly subscription, he also bears a good share of the cost of running the Company.

See also BRASS BANDS; CAMPING.

BOYS' CLUBS, see CLUBS, BOYS' AND GIRLS'.

BOY SCOUTS. Off the coast of Dorset there is a small island, Brownsea Island. In the summer of 1907 an expedition of twenty-four boys, led by a man who had won fame as a soldier, crossed to the island from the mainland and set up a camp. The soldier was General BADEN-POWELL (q. v. Vol. V), the heroic defender of Mafeking, and the boys were drawn from all classes of the community—from Eton College and the East End of London. The expedition was to test a scheme of training intended to appeal to all boys whatever their social rank might be. The party made camp on the island and remained there for a fortnight. The boys were divided into small units of six, called 'patrols'—for the scheme was based on the idea of small groups under their own leaders. This was the tiny seed from which has grown a movement which has spread all over the world.

In 1908 Baden-Powell published a book called *Scouting for Boys*, which was first issued in fortnightly parts and later as a complete volume. As a result of this book, Scout patrols began to spring up in almost every town and village of the British Isles. The outdoor adventure of Scouting—camping, tracking, nature-lore, pioneering, boating—appealed to boys, as did the banding together in patrols named after animals and birds.

By 1909 the Movement had spread throughout the British Empire and to other countries: Chile was the first foreign country to start Scouts. To-day there are approximately 4,500,000 of them in 42 countries. The United States of America has the greatest number, the figure at the last census being 1,982,520. Wolf Cubs were introduced in 1916 because younger boys wanted to be Scouts. Baden-Powell wrote a special book for them, called *The Wolf Cubs' Handbook*, in which he described the training, cleverly weaving it around the Mowgli stories in Kipling's *Jungle Books*.

A complete Scout Group consists of Wolf Cub

BOY SCOUTS PRACTISING PIONEERING
Boy Scouts Association

Pack (boys 8 to 12); Scout Troop (boys 11 to 15); Senior Scouts (boys 15 to 18); Rover Scout Crew (boys over 18). Before he can be enrolled, the intending Scout must pass his Tenderfoot test. For this he must understand the composition of the Union Jack and know the right way to fly it; he must clean a wound and make a simple dressing; he must be able to tie a few simple knots, such as the reef knot and clove hitch; and he must know by heart the Scout Promise: 'On my honour I promise that I will, do my best to do my duty to God, and the King/Queen; to help other people at all times, and to obey the Scout Law.' The Scout Law is as follows:

1. A Scout's honour is to be trusted.
2. A Scout is loyal to the King, his country, his Scouters, his parents, his employers, and to those under him.
3. A Scout's duty is to be useful and to help others.
4. A Scout is a friend to all, and a brother to every other Scout, no matter to what country, class, or creed the other may belong.
5. A Scout is courteous.
6. A Scout is a friend to animals.
7. A Scout obeys orders of his parents, Patrol Leader, or Scoutmaster without question.
8. A Scout smiles and whistles under all difficulties.
9. A Scout is thrifty.
10. A Scout is clean in thought, word, and deed.

This is the foundation of a boy's training as a Scout, the aim of which is to help him to develop into a good man and a useful citizen. He makes the promise at the enrolment ceremony and also gives the Scout salute, made by raising three fingers of the left hand. He is now a Tenderfoot, and entitled to wear the arrowhead-shaped Scout badge on the left pocket of his uniform shirt, and a metal badge in the button-hole of his coat when in mufti. His next step is towards his Second Class, which he can gain after one month's service as a Tenderfoot. For that he must pass a further series of tests, requiring an elementary knowledge of first aid, observation, pioneering, SEMAPHORE, or MORSE CODE (qq.v. Vol. IV), tracking, and the use of the compass. He must also be able to lay and

light a fire out of doors, using not more than two matches, and have a knowledge of the Highway Code. He is now qualified to try for the proficiency badges, a whole range of which are open to him, covering a wide variety of subjects. These badges are in two classes, one for the under-fifteens, the other for the over-fifteens, and they encourage the Scout to develop a skill which may possibly be of some help to him in choosing a career, and will certainly provide him with a useful hobby. The badges cover a wide range of subjects. They include Ambulance which requires competence in First Aid; Pathfinder which requires a detailed knowledge of the Scout's district and an ability to read and draft a map, and Signaller, requiring both Morse and Semaphore. There are badges such as Electrician, Farmer, or Cook, and others such as Artist or Musician, as well as many others. To gain his First Class the Scout must pass a series of tests in swimming, Morse and Semaphore code, finding his way on foot or in a boat, First Aid, cooking over a camp-fire, drawing and following a map, felling trees, knotting and lashing, and estimating heights and distances. He must also have a comprehensive knowledge of the Highway Code. A First Class Scout may become a King's Scout if he holds the Bushman's Thong, the Ambulance Badge, and any three of the other Public Service Proficiency Badges. The badges are worn on the left arm, the King's Scout wearing a crown-shaped badge above the First Class Badge. On the award of his King's Scout Badge, a Scout receives a certificate bearing a facsimile of the signature of H.M. the King.

Though in winter the weekly Troop meetings are held in the Troop Room, and include games and competitions, Scouting is essentially an outdoor pastime. On Saturday afternoons or on long summer evenings, during week-ends and annual camps, the boy learns to look after himself, to be alert to the lore of the woods and the hills, and to enjoy a happy fellowship of outdoor life.

The boy who is fond of the sea can become a Sea Scout. He receives the same basic training as the ordinary Scout, with the addition of boating and sailing, and a training in the art of seamanship. There are Sea Scout Troops on rivers and inland waterways as well as on the sea. Similarly, Air Scouts specialize in everything connected with the air.

SEA SCOUTS LEARNING TO HANDLE SAILS
Boy Scouts Association

The Rover Scout branch was started in 1918 for those who wanted to remain in the Movement after the age of 18, and the training programme aims to make them useful members of the community, able to render the service for which their training had fitted them. Senior Scouts (the over-15s) were inaugurated shortly after the Second World War. Apart from the special range of proficiency badges open to him, the Senior Scout enjoys a more venturesome type of Scouting programme—climbing, potholing (*see* CAVES, Vol. III), exploring, camping, and journeys to foreign countries, and he is given the opportunity to develop his interests in music, literature, drama, arts, and films.

In 1920 Baden-Powell sent an invitation to the Scouts of the World to come to London for a Jamboree. Contingents from twenty-one countries came. Since then there have been five more World Jamborees, at Copenhagen in Denmark, in 1924; Birkenhead in England, in 1929;

Godollo in Hungary, in 1933; Vogelenzang in Holland, in 1937; and Moisson in France, in 1947. World Jamborees have been held, therefore, every 4 years, except for the period of the Second World War. World Rover Moots are also held every 4 years, 2 years after each Jamboree. There have been three of these, at Kandersteg in Switzerland, in 1931; Ingaro in Sweden, in 1935; and Monzie in Scotland, in 1939. A fourth took place in 1949 in Norway. During the Second World War the Movement was suppressed in many countries of Europe. It was forced underground, but carried on surreptitiously, and at the end of hostilities emerged even stronger in numbers than before. Now once more the Movement is playing its part in bringing the boys of the world together in friendship, and contributing towards world peace.

See also GIRL GUIDES; CAMPING; TRACKING GAMES.

BRAINS TRUSTS. The original Brains Trust began in the winter of 1941 as a B.B.C. programme for the Forces, its aim being to provide information in an easily assimilable manner. It soon grew into a programme that combined education with entertainment, and was one of the most consistently popular of the B.B.C. broadcasts relayed all over the English-speaking world.

The first Brains Trust programmes were called 'Any Questions?'. They started with a regular panel of three speakers, Dr. Julian Huxley, Professor C. E. M. Joad, and Commander A. B. Campbell, with Donald McCulloch as Question Master. Most of the questions sent in by listeners were strictly factual, such as 'What is a rainbow?' and 'What is the greatest depth of water in which fish can live?', and, broadly speaking, the scientific questions were answered by Huxley, the philosophical ones by Joad, and the common sense queries by Campbell. But as time went by, the Brains Trust changed. Factual questions could always be answered by reference to an encyclopaedia. It was more interesting to hear experts of all kinds discussing matters of ethics and topics of the day; and the programme, based on listeners' questions, became a weekly discussion, in which many of the best brains in Britain were brought

A B B C BRAINS TRUST
From left to right are Lord Samuel, Kingsley Martin, Bertrand Russell, and Gilbert Harding. *B.B.C.*
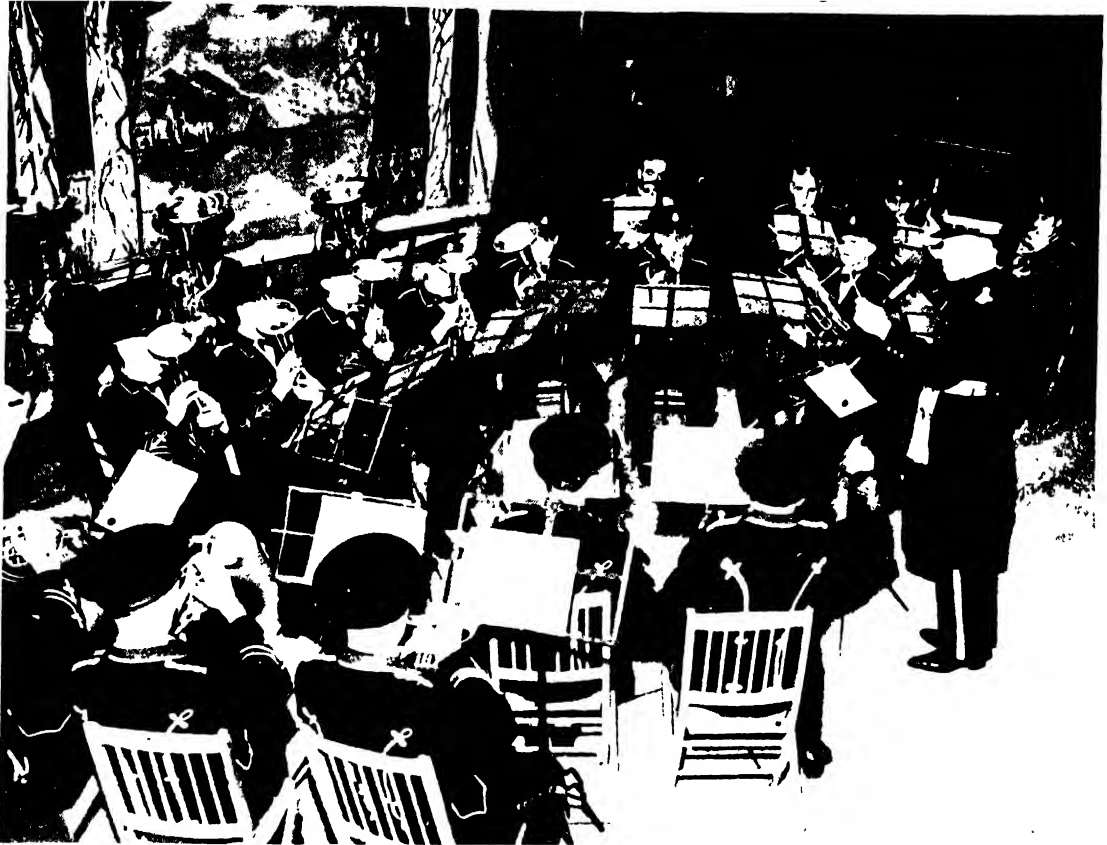
A BAND PERFORMING IN THE ANNUAL BRASS BAND CONTEST AT PONT . PRIDD IN WALES
Fox Photos

to the microphone. Writers, statesmen, philosophers, painters, musicians, and scientists were all heard in the Brains Trust.

There have been several variations of the original Brains Trust scheme – such as the inclusion of a guest speaker in a studio on the other side of the Atlantic, a Forces Brains Trust, and an all-woman Brains Trust. The programme has been widely copied, and 'non-broadcast' Brains Trusts on every kind of subject are now a commonplace throughout Britain and elsewhere.

See also BROADCASTING PROGRAMMES.

BRASS BANDS. These differ from MILITARY BANDS (q.v.) in that they consist wholly of brass instruments and percussion and contain no wood-wind instruments such as clarinets and oboes. The size and constitution of a brass band varies, often depending upon available instruments. In a band of 24 players the following combination might be found:

1 Cornet in E Flat
6 Cornets in B Flat
3 Flugelhorns in B Flat
3 Alto Saxhorns in E Flat
2 Tenor Saxhorns in B Flat (baritones)
3 Trombones (2 tenor and 1 bass)
2 Tenor Tubas in B Flat (Euphonium)
2 Bass Tubas in E Flat (E Flat Bombardons)
2 Bass Tubas in B Flat (BB Flat Bombardons)
1 Bass Side-drum may also be added.

Cornets, being the more flexible instruments, are used instead of trumpets. They play the passages usually allotted to violins in an orchestra and wood-wind in a military band. The E Flat cornet is used to play high notes beyond the range of the B Flat cornet.

The following table shows roughly how the instruments of the orchestra compare with those in the brass band:

Orchestra		Brass Band
Wood-wind	Flutes Oboes Clarinets Bassoons	Cornets " Euphonium
Horns		Saxhorns
Trumpets		Cornets
Trombones		Trombones
Percussion		Percussion
Strings	1st Violins 2nd Violins	Cornets
	Violas	Flugelhorns
	'Cellos	Euphoniums
	Double-bass	Bass Tuba

About the middle of the 19th century brass bands began to grow popular, particularly in the industrial areas of the North and Midlands of England. Interest in the brass band has now spread all over the country. Bands range from the well-known Black Dyke Mills formed in 1816, and Fodens, eight times winner of the national contest, to small local bands formed in villages and schools. Brass bands are heard at football matches, fêtes, and circuses, as well as in park bandstands. The Salvation Army has formed many bands of different sizes to play during their services. Many bands are composed of workers in factories, or collieries, and are often known by the name of the firm with which they are connected. Most band players are amateurs and practise in their spare time; the traditions of band-playing are often handed down from father to son. National contests arouse great interest among players, and competition is very keen. The first contest was held in Manchester in 1853. From 1900 almost up to the time of its destruction by fire in 1936 such contests used to take place at the Crystal Palace. Recently they have been revived with great success at Belle Vue in Manchester and elsewhere in the country.

BRASS INSTRUMENTS. 1. GENERAL. The term 'Brass' includes all intruments which in their original form were made of brass. The main members of this family employed to-day are: Horns; Trumpets; Trombones; Tubas; Saxhorns; Flügelhorns; Cornets; Bugles. In all these instruments the sound is produced by the vibration of the player's lips against the mouthpiece. Instruments which were formerly made of wood are not included among the brass, even though now they may be made of metal, for instance, modern flutes which may be either metal or wood. Metal instruments with reed mouthpieces, such as saxophones and sarrusophones, are generally classified as WOOD-WIND (q.v.).

The tone and technique of brass instruments is dependent upon three factors: (1) The mouthpiece, which may be cupped to give the brilliance of the trumpet, or funnel-shaped to give the soft tone of the horn; (2) the bore of the tube, which can be either cylindrical, giving a hard tone as in a trumpet, or conical as in the horn; a wide bore, as in the tuba, assists in the production of the lower harmonics; (3) the bell, which, if broad, softens the tone as in the horn, or if narrow, gives a more brilliant effect as in the trumpet.

Originally a brass instrument could only play the notes of its 'natural' harmonic series (see MUSICAL INSTRUMENTS), which accounts for the unmelodic writings for brass instruments by early composers. By the introduction of 'valves', the length of the sounding-tube could be quickly varied, giving other harmonic series, and thus making the instrument fully chromatic, that is, capable of playing all the twelve semitones in all octaves within its range. In this way most of the brass became melody-playing instruments. In the case of the trombones, which do not have valves, variation in the length of the tube is produced by a slide, which is operated by the right hand of the player.

Most valve instruments have three valves or pistons. When depressed, these allow air to enter extra lengths of the tubes of the instruments, thereby increasing the total sounding length, and lowering the pitch from one to six semitones according to the number of valves opened.

2. HORN. The modern horn is a descendant of the hunting horn. That used in the orchestra is the French Horn, or the heavier toned but more manageable German Horn. It has a longer tube and therefore lower pitch than the trumpet, with circular coils, a large bell, and a funnel-shaped mouthpiece. The dreamlike quality of the tone is closely associated with the wood-wind of the orchestra. It has a wide range of intensity from soft to loud, and is used in the orchestra to sustain the middle register and for melodies.
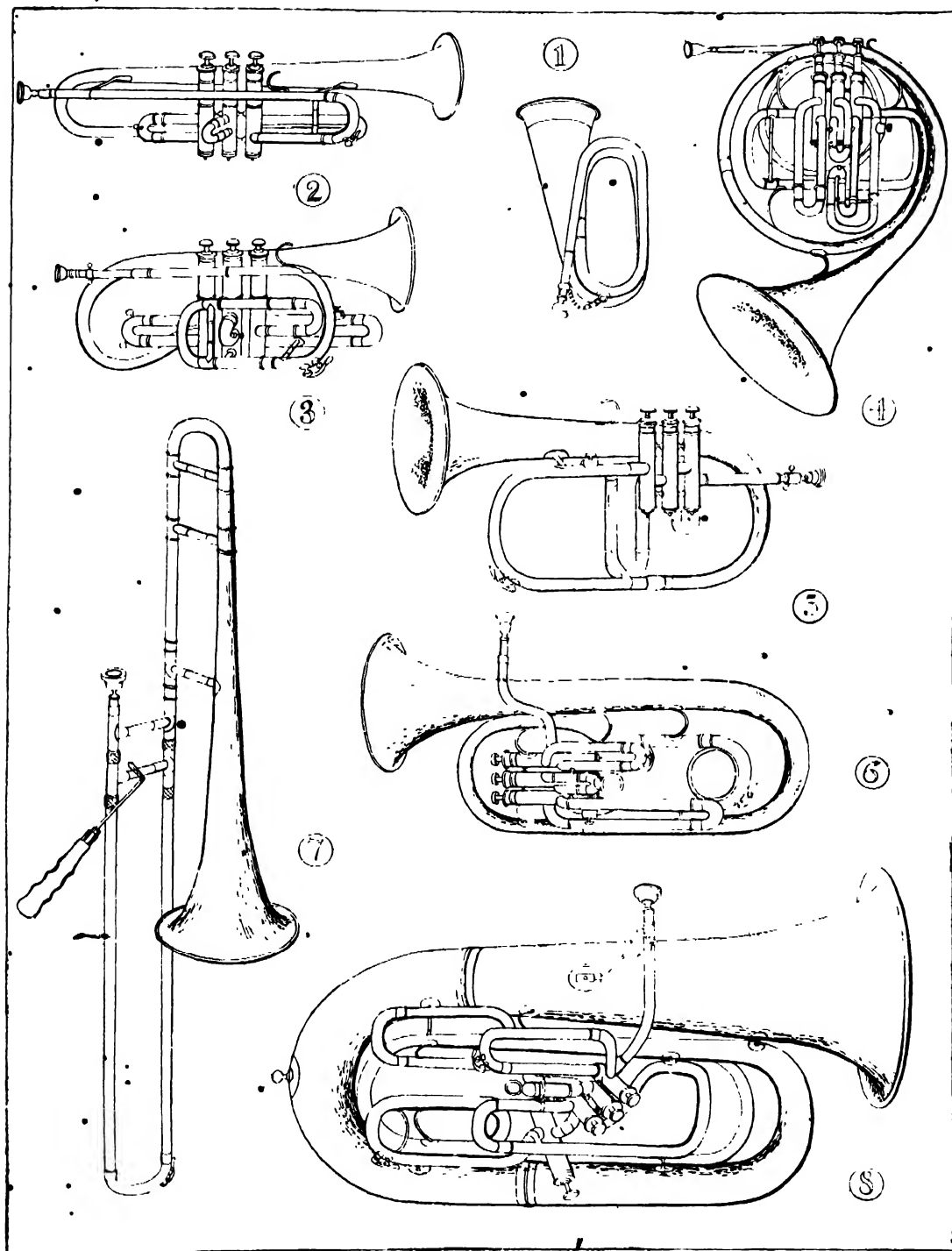
BRASS INSTRUMENTS

1. Bugle in B♭; 2. Trumpet in B♭; 3. Cornet in B♭; 4. French Horn; 5. Flugelhorn in B♭; 6. Saxhorn in E♭;
7. Bass Trombone in ; 8. Bass Tuba

Horns can be muted by inserting a mute in the bell. They can also be played 'brassed', that is, muted but blown with full wind force.

The 'natural' horn could only play the notes of the harmonic series in which it was pitched. In the 18th century its range was increased by using 'crooks'—additional lengths of tube which could be inserted to increase the total length, and so introduce an additional harmonic series. Thus the open notes of a 'C' horn were:

(The fundamental note was almost impossible to produce.)

A horn crooked in 'D' would produce as its open notes:
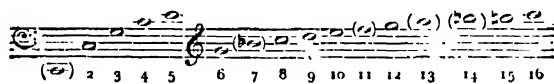
In addition it was possible to produce notes either a semitone above, or a semitone or tone below any 'open' note by inserting the hand in the bell of the instrument. These notes, lacking the brilliance of open notes, were called 'stopped' notes. With the introduction of valves any note within the compass of the instrument could be played, and the horn became fully melodic.

Modern horns are usually permanently crooked in F, and are written for as transposing instruments sounding a fifth note lower than the written notes. There are normally four horns in a modern orchestra, and the four parts are written on two staves, the first and third on the higher stave and second and fourth on the lower stave.

3. TRUMPET. This has a cylindrical tube bent in an oval shape, with a large bell, and funnel-shaped mouthpiece. The tone is sharper and more brilliant than that of the horn, and its range higher. The range is extended by the use of crooks and valves; but 'stopped' notes made by placing the hand in the bell are not possible. It can be muted—Wagner was one of the first composers to use this effect regularly—and a 'brassed' effect can be obtained. It has a wide range of expression, though its brilliant tone makes it particularly suitable for melodies of a martial character.

.The natural trumpet, without crooks or valves, which can only produce the notes of one har-

monic series, is sometimes used in place of the bugle for military signals and fanfares.

The Bach or Handel Trumpet was an attempt made in the 18th century to turn the natural trumpet without valves into a melodic instrument by narrowing the bore of the tube. This enabled the higher notes of the harmonic series, which lie close together, to be produced easily. With the coming of valves the need for the Bach instrument disappeared.

The pitch of the modern trumpet is usually Bb or A. It is sometimes written for as a transposing instrument, sounding two or three semitones lower than written; but now it is often written for at the pitch at which it sounds.

Usually there are two trumpets in the orchestra, but sometimes three or more are used. They are associated with the three trombones in five-part harmonies.
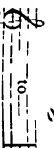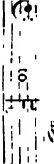
4. TROMBONE. This instrument is similar to the trumpet in shape, but has a larger mouthpiece giving a more solemn tone, and a longer tube giving a lower pitch. Like the trumpet and the horn, the trombone produces notes in the harmonic series from the fundamental note. The full chromatic scale in the trombone is obtained by varying the length of the tube by means of a slide, which is operated by the right hand of the player.

The trombone is a descendant of the Sackbut, which was popular from the 14th to the 17th century. For a short period the instrument seems to have fallen into disuse, but both Berlioz and Wagner did much to re-establish it again as a regular member of the orchestra. There are usually three trombones, two tenor and one bass, in the normal orchestra. The bass trombone (in G) is pitched a minor third lower than the tenor trombone, which is in B Flat, and is a slightly larger instrument with a handle attached to the slide. Three trombones are also regularly used in military and brass bands.

The trombones can be used as one self-contained unit in three-part harmony or in five-part harmony in association with the trumpets. The trombone can also be used as a solo instrument and can be muted.

5. TUBA. The term tuba is loosely applied to almost any bass-pitched brass instrument, except the members of the trombone family. Most tubas resemble the trumpet in shape, but, like the horn, have a conical bore. The mouthpiece may be cup-shaped like a trumpet, or

COMPARISON OF BRASS INSTRUMENTS

	Horns	Trumpets	Trombones	Tubas	Cornets	Saxhorns	Flugelhorns
1. Bore of tube	conical	cylindrical	cylindrical	partly cylindrical partly conical	conical	conical	Conical and wider than Saxhorns
2. Shape of mouthpiece	funnel	cup	partly cup partly funnel shaped	generally cup-shaped	cup-shaped	cup-shaped	cup-shaped
3. Method of varying pitch	3 valves	3 valves	slide	3 valves	3 valves	valves	valves
4. Usual number *(a)* in Orchestra	4 (Wagner used 8)	2 (sometimes 3)	3 (2 tenor, 1 bass)	1	—	—	—
(b) in Brass Band (24 players)	—	—	3	7	5	—	—
(c) in Military Band: 12 players	2	3	6	6	6	6	—
5. Normal compass (approx.)	(Horn in F) [music notation] (Written: but sounding a fifth lower)	(Trumpet in B♭) [music notation] (Written: but sounding a tone lower)	(Tenor Trombone) [music notation] (Bass Trombone is a minor 3rd lower)				
6. Important dates in history of instrument	1705 first introduced in orchestra	Mentioned in Bible. First orchestral use of valve trumpet—1835	In early times known as the sackbut and in A.D. 1495 Henry VII had four 'Shaksbuts'	1869 (Wagner started to use family of tubas regularly	1829 First used in first performance of Rossini's *William Tell*	1845 Introduction by Adolphe Sax	—
7. Key in which usually pitched	F.	B Flat or A. (other keys are frequently met with, however, particularly in old scores)	B Flat (Tenor) G (Bass Trombone)	B♭, E♭, F or BB♭	B♭ or A	Alto (E♭) Tenor (B♭)	B♭
8. Outstanding works	Mozart: 4 concertos Strauss: 1 concerto Weber: 1 concertino	Handel: 1 concerto Mozart: 1 concerto Haydn: 1 concerto and several concertos	Beethoven: 3 equali David: concertino for Wagner's *The Ring*	Specially designed for Wagner's *The Ring*	Used in Bizet's *Carmen*	—	—

funnel-shaped like a horn. Wagner introduced tubas of the latter type into the orchestra to extend the range of the horns by adding the tenor and bass lines of the full harmony. The modern tubas are similar in form to those used by Wagner. The tubas now used in British bands and orchestras are:

1. Euphonium or Tenor Tuba in B♭.
2. E♭ Bass Tuba or Bombardon.
3. F Bass Tuba (the most common tuba in orchestras).
4. B♭ Bass Tuba or B♭ Bombardon.
5. Helicon (a tuba curled into a shell shape).
6. Sousaphone (like a Helicon with the bell turned up and ending in a flange, and frequently used in Dance and Regimental Bands).

The tuba is not a transposing instrument, that is, its written notes are set down exactly at the pitch that they sound.

6. CORNET. This resembles the trumpet in general appearance and construction, but is shorter and squarer, with a more deeply cupped mouthpiece. Its bore is cylindrical for the greater portion of its length, but widens conically towards the bell. Three valves give it a full range of notes throughout its compass, which is almost the same as that of the trumpet.

The cornet was first used for orchestral music in Rossini's *William Tell* in 1829. The quality of its tone is considered by some to be inferior to that of the trumpet, which it has now displaced from the brass band because of its greater flexibility and the relative ease with which it can produce rapid and florid passages.

It is 'crooked' like the trumpet in B♭ or A, and is written for as a transposing instrument, that is, a tone or three semitones above the actual sound. Most modern B♭ cornets are fitted with a built-in extra crook, which allows the player to switch from B♭ to A at will.

7. BUGLE. This is used for military calls, such as the 'Reveille' and 'Last Post', and rarely in orchestral music. It has no crooks or valves, and is therefore only capable of playing the notes of its natural harmonic series. It has a cup-shaped mouthpiece and large bell like the trumpet, but a conical bore like the horn. Bugle bands are often used by organizations such as the Boys' BRIGADE (q.v.).

8. SAXHORN AND FLÜGELHORN. Both these instruments were introduced by Adolphe Sax in 1845. They are similar in form to the bugle, but have valves, and so can play the full chromatic scale. There are various types of both instruments, ranging in pitch from soprano to bass. The flugelhorn has a larger bore than the saxhorn, which gives it a richer quality of tone.

The saxhorns are written as transposing instruments, and are employed extensively in brass bands and French military bands.

See also BRASS BANDS; DANCE BANDS; MILITARY BANDS; MUSICAL INSTRUMENTS.

BRIDGE. This is a card game played by four players, two being in partnership against the other two. It is the same type of game as WHIST (q.v.), and was thought to have originated in Russia, being first called 'Biritch'. It was introduced to London at the end of the 19th century, and soon took the place of whist in the London card clubs. There have been several varieties of the game - the original bridge or bridge-whist, auction bridge, and contract bridge (each of which has ousted its predecessor), as well as plafond, a variety of contract played on the continent. The essential difference between whist and bridge is that in bridge, one hand — that of the declarer's partner — is exposed on the table during the play of the hand. This player is called 'dummy' and takes no further part in that hand, the declarer playing the combined hands.

1. BRIDGE. In the original bridge, the players were each dealt thirteen cards, which they arranged in their hands into suits. The dealer then 'declared' — chose the trump suit or declared 'no trumps' — or, if he liked, he passed the choice to his partner. Either of the opponents might 'double', which meant that he and his partner undertook to make more tricks in the suit chosen than the declarer. The declarer might 'redouble' if he wished. The hand was then played, the player to the left of the declarer leading, and the declarer's partner laying his cards on the table. Players counted towards winning the game any tricks they made after the first six: a win of thirteen tricks, therefore, counted only seven towards the game. Only one side in each hand could, therefore, score towards the game. Each suit had a different value as trumps — Spades, the lowest, counting 2 points per trick, Clubs counting 4 points, Diamonds 6 points, Hearts 8 points, and No trumps 10

points. Later on Royal Spades, counting 9 points, were added. A player with so weak a hand that he was sure to lose, called Spades, scoring only 2; but, if he had a strong hand of Spades, he called 'Royals', hoping to win at the high score of 9. All these points counted double if the opponents had doubled the declaration. On the scoring sheet these scores were marked below the centre line. A total of 30 or more points below the line was needed for game, and the first side to win two games won the rubber. Above the line were marked other scores which did not count towards game but were added into the final total. Points above the line were won for holding three or more 'honours' (court cards, tens, or aces) on one side; for making a 'grand slam' (taking all the tricks), or a 'little slam' (taking all but one trick); and for winning the rubber. A small score was also made for 'chicane' (having no trumps at all).

2. AUCTION BRIDGE. This new version of bridge was introduced about 1910. Instead of the dealer nominating trumps, this privilege was held up to auction. The player bid for trumps, the dealer starting, and each raising the bid according to what he believed his hand could make, given his choice of trumps. The highest bidder played the hand, and if he failed to make his contract, the other side scored above the line. The value of the suits was changed, Clubs scoring 6 points, Diamonds 7, Hearts 8, Spades 9, and No trumps 10. The score for chicane was abolished after 1928. Accurate bidding in auction bridge was as much a factor in success as the ability to play the hand to the best advantage. The playing of the hand was the same as in the old bridge, except that the bidding might have given some indication as to where the cards lay.

3. CONTRACT BRIDGE. About 1928, an improved version began to supersede auction bridge. In contract bridge only the actual number of tricks which have been contracted for count towards the game—those beyond the contract only scoring above the line. The technique of bidding, therefore, consists not only in bidding enough to outbid the opponents, but also, if possible, enough to make a game. A 'slam', which carries with it very large bonuses, can only be scored if it has been contracted for. The penalties for not making a contract are also high—and in consequence the scoring altogether is in much larger numbers. The values of the suits are higher—Clubs and Diamonds scoring 20, Hearts and Spades 30, and No trumps 40 for the first trick and 30 for further tricks. The game is for 100 points instead of 30. When one pair have won one game, they become 'vulnerable', that is, the penalties they incur on failing to make a contract are much increased. If the contract is doubled, they may be very high indeed.

In contract bridge the technique of bidding has been studied intensively, and a number of conventions have been developed, whereby a player can interpret his partner's bid to indicate the possession in his hand of certain strength or weakness. Some very artificial conventions have evolved, so complicated that they could only be followed by players accustomed to playing with each other. Many books have been written about it, perhaps the most successful, and certainly the best known, being those by an American, Ely Culbertson, who popularized the game in America. Many of the daily and weekly newspapers have articles on contract bridge, and also publish bridge problems for competition. Games have been broadcast and televised. There are bridge congresses, tournaments, and international competitions.

For competitions duplicate bridge' has been devised, for this eliminates the element of luck. Each deal is played in duplicate between teams of four players. In one 'room' the players of Team A hold the North-South cards and the players of Team B hold the East–West cards: in the other 'room' their positions are reversed. Whichever team gets the better result, taking the two rooms together, scores points accordingly. Other very complicated forms of duplicate bridge have been devised, some of them assessing the merits of rival pairs and even of individual players.

See also CARD GAMES; PLAYING CARDS; WHIST.

BROADCASTING. One of the many remarkable results of the invention of WIRELESS (q.v. Vol. IV) has been the development of a Broadcasting Service in most countries of the world. In Britain this service is under the control of the British Broadcasting Corporation, the B.B.C. Although Broadcasting as a medium for communication, for education, and for entertainment is still comparatively new, it has already made great progress in establishing its own technique. In this article we are mainly concerned with the application of this technique

of broadcasting for entertainment and recreation. The radio has become one of the principal means of recreation to very great numbers of people.

Broadcasting has drawn widely upon older forms of entertainment—the theatre, the cinema, and the music hall—but it is no mere imitator of these, and has created and produced programmes that could not be presented by any other means. The CHILDREN'S HOUR (q.v.), for example, is only for the ear: to produce it on the stage or screen would be to take it out of its proper element. The well-planned broadcasting programme of to-day is designed to appeal through the sense of hearing alone. TELEVISION (q.v.), with its appeal to the eye as well as the ear, presents problems of its own. In sound broadcasting, then, programme planners, writers, artists, and producers have been obliged to work out special solutions to the problems that each type of programme, in its own way, presents. Since organized broadcasting took shape about 1920, they have so developed their techniques that they may be said to have created a new art: the art of radio.

For broadcasting, as for the theatre and the cinema, special devices and apparatus have to be provided. The standard equipment of many studios includes, for instance, 'banks' of electrically-driven gramophone turn-tables, on which it is possible to play several records simultaneously, drawing on, or mixing, as may be required, the sounds which each gives respectively. Control panels, each knob on which is the 'controller' of an individual source of sound, have become indispensable. So has the 'echo-room', a place with bare walls in which the sound from a loudspeaker is picked up by a microphone after it has echoed round the room, so producing the effect we all know. These, however, are the tools of the radio artist. His art must find its true expression in his use of them, and it does so in a variety of ways.

The actor or actress who has been trained to use facial expression and movement in the interpretation of a character must learn to achieve the same effects by the use of the voice alone. There is no scenery, no lighting in radio, and none of the visual 'business' and movement with which the stage actor enlivens and heightens

THE CENTRAL CONTROL ROOM IN BROADCASTING HOUSE
Through this room are switched the London Home Service, Light, and Third Programmes for reception in the United Kingdom, and the many programmes of the B.B.C. European and Overseas Services. *B.B.C.*

his performance. The ear being the sole judge, the producer's one concern is with sound. His cast may act in slacks and shirt-sleeves, but their voices must be as impeccable and convincing as their art can achieve. Despite the absence of a visual audience, almost all radio players use gestures and facial expressions—the clenched fist, the scowl, a grin, a jerk of the head—to aid their characterizations. But, unless they are told to do so, they never change their position. The animation of a radio play is in the voice. But the voice is a wonderful instrument, and, as several successful radio players have proved, by skilful use of intonation, by ranging the scale from a whisper to a shout, by the adroit use of pauses (the 'dramatic pause' might have been designed for radio), and by carefully calculated emphasis of important words in the lines, the imagination of the listener can be effectively stirred and fully satisfied. In casting his plays the producer takes into consideration the fact that contrasts of voice will give tone colour to his programme, and will help the listener to identify the characters accurately.

The script writer, too, must modify his art to suit his medium. Whether he seeks to entertain, to interest, or to inform, in preparing words for the microphone he must think always of the listening ear, not of the reading eye. He must avoid long, complex sentences. He must remember that it is difficult for the listener to think back while listening. He must emphasise, without appearing to do so, the important parts of his sentences. He must avoid the dangers of monotony and must achieve his variety by subtle use of sound effects. And if he is writing radio humour, he must so introduce his characters that the listener instinctively forms a picture of them in his mind and so is the more easily able to appreciate the point of his jokes. In British broadcasting the classic example of this form of entertainment was the variety series, 'Itma'. In this popular Tommy Handley entertainment there appeared, week after week, certain familiar characters, who generally identified themselves by some familiar catch-phrase, such as 'Can I do you now, Sir?' or 'I don't mind if I do', and the audience knew at once what sort of fun to expect. This is a technique which would be useless for the stage or cinema, but is specially suited to the recurring broadcast programme, for the memories of the audience immediately

supply a whole setting of associations in which the radio favourite can easily play his part.

A great number of scripts are written for the purpose of broadcast talks; but however good the script, its full value may be spoiled by inexperienced delivery at the microphone. A high and specialized standard is demanded of the professional announcer. Even though he has the natural qualities of voice most suitable to the microphone, the would-be announcer must still learn breath control, how to modulate his voice, and how to control his inflexions. Some broadcasting concerns, the B.B.C. among them, have special training courses for their announcers, so that, when they come to the microphone, they do so with the confidence and skill of the expert.

It is not necessary, of course, for the casual speaker to have so trained a technique: indeed, much of the human colour and appeal would go out of broadcast speech, if native and natural ways of speaking were to be ironed out of every speaker. The speaker is most likely to be successful when he speaks with sincerity and is natural in his approach to the listener, talking as one human being to another. This natural, unassuming quality is the main attribute of the successful broadcaster.

The news editor's problems are different again. Broadcast bulletins are condensed reports and can never take the place of the newspaper. They are prepared in a special way. Because they are for listeners, not readers, the editors dictate the contents to a typist, so that they may judge, first whether the sense is clear and instantly understandable, and secondly whether the bulletin can be spoken smoothly and easily: the news readers themselves often have little time to consider a bulletin before they go to the microphone. The editors must remember, too, that unlike the newspaper reader, the listener has no chance of 'glancing back' to check a doubtful point; therefore ambiguity is fatal, and there must be the right emphasis on the key points.

As with all mediums, such as the stage and the cinema, the medium of the microphone is much more suitable for representing some things than others; and the art of broadcasting depends partly on the right selection of material for the special powers of the radio. The radio can overcome difficulties of distance, and to some extent of time. It can bring to us in our own houses a first-hand experience through our

sense of hearing of people of all kinds and from all over the world, of people with whom in no other way should we have so direct a contact. This particular feature of the radio is exploited in the special 'feature programmes' which are, perhaps, more than any other form of radio entertainment, expressive of the art of broadcasting, (see BROADCASTING PROGRAMMES, Section 5).

See also Vol. IV: WIRELESS, HISTORY OF.

BROADCASTING COMMENTARIES.

Outside Broadcasts range from a single commentator interviewing people in their homes to the reporting of great occasions of State, which may require many commentators placed at intervals along the route of the procession. Between these extremes come current events of all kinds, musical and theatrical performances, and the whole world of sport. The sound is relayed by Post Office line from the microphone and control point on the spot to the nearest B.B.C. centre, where it is transmitted. In addition to the commentator himself who speaks into the microphone and reports on the event, an engineer is also present (see BROADCASTING PROGRAMMES).

The arrangements for a commentary vary widely according to the event to be broadcast. A commentator and an engineer may go to the place with a recording car at very short notice; or engineers and planners may have worked for

A RADIO COMMENTATOR AT WORK
The broadcasting of the Jersey International Road Race, April 1948. B.B.C.

months to set up a whole series of commentary points and a special broadcasting centre, as was done at the Coronation of King George VI in 1937 or in the case of the Olympic Games at Wembley in 1948.

As a typical example, let us see how the commentary on a soccer match is broadcast. Many weeks before the event, a meeting is held in the B.B.C. Outside Broadcasts Department, where a schedule of forthcoming matches is considered, and application for permission to broadcast a particular game is made to the authorities - in this case the Football Association or Football League. The next stage is an examination of the ground (if no broadcast has been made from it before) by a member of the Post Office Engineering Department, a B.B.C. Outside Broadcasts Engineer, and a member of the Outside Broadcasts Programme Department. They find out first if Post Office telephone lines are available on the ground, or are near enough to be linked to the B.B.C. equipment, so that the commentary can be passed by them to the nearest B.B.C. centre. They choose a control point, where the engineering equipment can be placed, and a commentary point, where the commentator will have his microphone, as near to one another as possible. If no suitable room or balcony for the commentator is available, a special box is built, or a good position in the stands is chosen. The ideal position for football is level with, and slightly above, the half-way line; for cricket it is behind the bowler's arm; and for racing the best place is at the finish with a good overall view of the course. If the commentator uses a box, he will have a fixed microphone; but if he is among the crowd, he will use a lip microphone, which he holds close to the mouth and which cuts out all sounds except his commentary.

When these arrangements have been made, a commentator is detailed to cover the event. He begins work two or three days before the match by getting in touch with the home club to find out the names of the probable teams, and, if necessary, any other background material. On the day itself he reaches the ground in ample time to collect last-minute details, and usually asks permission to visit the dressing-rooms, so that he can have a close view of the players in their kit. This is most important, as a man in shorts and jersey can look quite different from the same man in ordinary clothes.

He is then ready to settle down with his

assistant at the commentary point and wait for the whistle. The commentator's assistant is rarely heard on the air, but he has an important task. He keeps an eye on the score and the time, picks up any mistakes the commentator may make, runs errands, and on a windy day may even have to hold down the commentator's programme and notes.

A good commentator needs certain qualifications as well as a clear voice, fluency of speech, an eye for a situation, and a feeling for the vivid word and phrase. He must be able to keep the balance of his commentary, so that the listener does not get a distorted idea of what is happening or miss some important point of the main event because the commentator has chosen that moment to bring in a reference to something interesting that may be going on in the crowd. He must be able to adapt the speed and pitch of his commentary to reflect the constantly changing picture he is describing. He must be able to keep up with what is going on, and never be at a loss for a word—this is particularly important when describing a BOXING (q.v.) bout, where blows are rapidly exchanged, or an ICE HOCKEY (q.v.) match, where play is incredibly fast. Finally he must be objective in describing what he sees—it is the event that interests the listener, not what the commentator thinks about it. On some days several commentaries take place on different events in different parts of the country; and listeners are switched from one place to another to hear the interesting features of each.

See also BROADCASTING.

BROADCASTING PROGRAMMES. 1. A

country's broadcasting organization, the greatest mass entertainer yet devised, has to cater for millions of listeners, among whom are found widely different tastes and whose moods constantly vary.

In Britain the B.B.C. has built up three programmes for home broadcasting—the Home Service, the Light Programme, and the Third Programme, and there are as well a number of services directed to overseas listeners. By these programmes the B.B.C. gives listeners a regular choice of entertainment throughout the day (the Third Programme is heard only in the evening). Generally speaking, the Light Programme, as its name implies, consists of variety, dance music, drama, and includes regular features such as

PERFORMING A RADIO PLAY

The producer and senior programme engineer sit at the control panel in the cubicle above. *B.B.C.*

Housewives' Choice and Women's Hour; the Third Programme presents items which are more serious in purpose and directed to a more intellectual audience; the Home Service falls somewhere between the two. It is, of course, impossible to draw hard and fast distinctions between these programmes: they are not directed exclusively to particular audiences: the aim is to provide choice and variety.

2. SPOKEN ENTERTAINMENT. Outside the field of factual and informative broadcasts are a variety of forms of spoken entertainment. Sometimes the entertainment value lies in the fact that the programme is spontaneous: programmes such as the BRAINS TRUST (q.v.) or the question-and-answer kind, and certain discussions and debates, would obviously have little value if the speakers knew beforehand what they had to say. Sometimes those taking part in unscripted discussions have a preliminary meeting to take the measure of each other, and to indicate, for the producer's benefit, the points they propose to make. But when they meet around the studio table, their words are genuinely

spontaneous. The greatest problem is to ensure that the individual points are clearly made within the allotted time, and for this an experienced chairman or question-master is needed. His task is to direct this spontaneous talk into the necessary shape.

'Magazine' programmes, however, are usually scripted, and some of the items that make up the content are often pre-recorded. Programmes in which celebrities, or people with an interesting story to tell, are interviewed—the B.B.C.'s 'In Town Tonight' is an example—take place in the studio, the speakers nearly always speaking from a script.

Spoken entertainment is one of the ways in which the public itself takes an active part in the making of a radio programme, and so is a most effective way of fulfilling a major responsibility of broadcasting—to bring the people to the people.

3. MUSICAL PROGRAMMES. Because music is written for the ear, it is especially suitable for the medium of broadcasting, and in one form or other it occupies the biggest place in all broadcasting schedules. Programmes vary from intimate chamber music to symphonies played by large orchestras, from dance music to opera, and from the world's greatest artists to soloists hoping to make their names. So important is music to broadcasting that some studios have been designed to meet the needs of the varying kinds of musical combinations—one studio for trios and small ensembles, another for brass bands, a third for orchestras, and so on. Many concerts and programmes, on the other hand, come from outside the studio—from concert-halls, theatres, band-stands, or, indeed, any place where music is being played for public entertainment.

Concerts of works by the great composers call for especially careful treatment by the broadcasters. The need for carefully balancing and controlling the contrasting tone-colours and volumes of a big orchestra, to make sure that the sounds of the various instrumental sections reach the listener in the right perspective, was realized early in radio history, and the need produced a new kind of specialist: the programme engineer. He is both a musician and a technician, able to follow the score and able so to adjust the controls of the microphones that a truly-balanced performance goes on to the air. Nowadays, programme engineers are indispensable in the production of almost all types of programme.

In outside halls, where the conventional arrangement of the instrumentalists must be observed, the local acoustic conditions often present difficult problems. Usually, these may be overcome by the judicious placing of microphones—sometimes as many as six or seven are brought into use. In the studio, of course, the broadcaster can arrange the orchestras in the best position in relation to the microphones.

Broadcasting has been the means of bringing music to people who, before, rarely attended concerts. In consequence there is now a much greater demand for musical entertainment: and this gives new opportunities and incentives to composers, orchestras, instrumentalists, and singers. Many works by modern composers have been specially commissioned for the microphone. In Britain the B.B.C. is by far the biggest employer of musicians. With this increased demand has come an insistence on high standards of performance.

4. DRAMA PROGRAMMES. To-day, acting and writing for the microphone have become recognized branches of the art of drama. It is not necessary for the cast of a radio play to memorize their lines, as each member has his own copy of the script; but many hours of rehearsal are necessary. Rehearsals for a thirty-minute play, for instance, may occupy several days.

When the play has been selected, and the cast engaged, production begins with a reading-through of the script. Then the producer begins to coach his players. They are in a studio, using a microphone; he is in an adjacent sound-proof control-cubicle, listening to them on a loudspeaker, and able to talk back to them through a microphone in the cubicle that is connected to a loudspeaker in the studio. He is able to see the cast, and they him, through a plate-glass window between the two rooms.

When he is satisfied with the interpretations of the various parts, he calls for a run-through—that is, the play is presented from beginning to end. This gives the producer a chance of timing the work (a vitally important matter in the production of any broadcast), and so of making cuts, or adjusting the tempo of presentation, to bring it within the allotted period. There may be two or three such 'runs-through' before he is satisfied.

During the actual transmission he cannot

TWENTY QUESTIONS, THE POPULAR PARLOUR GAME, ADAPTED FOR RADIO
A team of four tries to guess a chosen object, which is known to the listeners and to the studio audience. *B.B.C.*

communicate, of course, with his actors and actresses over the talk-back system, so the cues are given by means of green lights alongside the studio microphones, switched on and off from the control point. The actual operation of the mixer panel, and the cue-switching, is done by the programme engineer working with the producer.

5. FEATURE PROGRAMMES. This is a sound-picture of an event or occasion, or of human activity, history, or enterprise, compiled especially for the microphone. It may reflect for us, in a vivid and authoritative way, a situation of our own day—the post-war state of children in Europe, for instance. Or it may take us back into history, and reconstruct a great event. Or it can hold up the mirror to one interesting corner of the country-side, or one aspect of life in a great city. Speech, music, 'actuality' recordings, contributions from other countries, contributions by authorities on the subject concerned, and, very often, creative writing of a high order, all go to the making of a feature programme, and many months may be spent in its preparation. In the British Commonwealth the best-known radio feature is probably the

'Round-the-World' programme that precedes the Royal broadcast each Christmas. The producer may think of his central theme and begin to plan the contributions he will require some time in the summer. Cables and letters are exchanged with the prospective sources in the Commonwealth, Colonies, ships at sea, or wherever they may be, until the contribution from each source is settled. Then comes the task of welding them into a harmonious, attractive whole—a task greatly complicated by the need for exact timing. Whenever possible, the contributions are taken in their 'live' form—that is, the speakers are at the microphone in the distant place, and begin their part of the programme, which normally comes back to London over the radio-telephone system, when they hear the narrator in London give them their 'cue'.

As a precaution against any failure of the radio link, the contribution is also recorded beforehand, and flown to London. Then, at the same time as the programme is actually being broadcast, the recordings are played, so that if anything unexpectedly goes wrong, the switch from 'live' to recording can be made without any interruption.

All the incoming 'channels' end on a big 'mixer' panel, bristling with knobs, at which sits an experienced, highly skilled programme engineer. It is his job, under the producers' guidance, to fade in and fade out the various contributions, linking music, narration, and the rest of the sequence of items that make up the programme. And of all forms of radio entertainment, the feature programme is the one, perhaps, most expressive of the art of radio.

6. VARIETY PROGRAMMES. Radio's greatest mass appeal is in the 'variety' programme. These include specially written and presented productions, designed only for broadcasting; radio equivalents of the old-time MUSIC HALL (q.v.); dance and popular music programmes; revues, MUSICAL COMEDY, and PANTOMIMES (qq.v.); certain kinds of magazine programmes; performances by famous artists; and reflections of events in other spheres of entertainment.

Some programmes are presented before audiences in the studio, in order to give the comedian the spur of visual response; though he must always remember that his real audience is the distant 'listener'. When there is a visual audience, the show is presented on a small stage, the cast, effects, and orchestra grouping themselves according to the positions of their respective microphones. Scripts are used, and the technique of production, in its main essentials, is similar to that for radio plays. But because broadcast humour must always sound spontaneous, alterations in the script and last-minute additions are often made.

7. ADVERTISING PROGRAMMES. In Great Britain the B.B.C. is not allowed to use its system for commercial advertising; but in many countries overseas the broadcasting organizations sell time to firms and business houses in which they present a programme designed especially as a means of advertising their wares. The United States gave the lead in this field, and the practice has grown into a recognized branch of the ADVERTISING business (q.v. Vol. VII). The sponsor may himself provide the programme, or he may engage the broadcasting organization to do it for him. Obviously the time he best likes to buy—and for which therefore, he pays the highest rates—is in the evening, when the maximum number of people is free to listen. Because of its general appeal, and therefore because it gives the best assurance of large audiences, and so of potential purchasers,

light entertainment is the type of programme most favoured for 'sponsored' or 'commercial' programmes.

8. OUTSIDE BROADCASTS. Every week scores of programmes come from outside the studio. They include commentaries on almost the whole range of popular sporting events (*see* BROADCAST COMMENTARIES), great music from famous concert halls and light music from restaurants, excerpts from operas, plays, and pantomimes, all of which obviously add to the entertainment to be derived through a radio-set. Broadcasts of a more serious nature, such as services from churches and chapels, and important speeches by statesmen and others, also fall in the category of what broadcasters called 'O.B.s.'

The work of outside broadcasting is often spectacular and varied. There have been broadcasts from under and on the sea, from weather ships and lighthouses, from the bottom of a coal-mine, and from aeroplanes. When an 'O.B.' is carried out, it is necessary to instal control apparatus and amplifiers at the programme source, and microphones specially developed for the job are used. One of them, known as a 'lip' microphone, serves a dual purpose: it enables the commentator to speak in little more than a whisper (which may be necessary when, for example, he is inside a cathedral describing a solemn ceremony), and it enables him to be heard against any amount of 'background' noise.

Telephone lines connect the control apparatus to the local exchange; from there the programme goes over the telephone system to the exchange nearest the studio centre, and thence to the centre itself. On very important occasions, as, for instance, the King's Christmas Broadcast — two different sets of lines, travelling over different routes, may be used, so that, in the event of a breakdown on the one route, the programme can be instantaneously switched to the other.

9. LISTENER RESEARCH. Naturally, the listener's reaction to any radio programme matters a great deal to the broadcaster, for in radio, as in other forms of entertainment, the audience is ultimately the judge. But unlike other forms of entertainment, radio has no box-office returns whereby to judge its success, and so some broadcasting organizations have set up special research departments to study and assess scientifically the views and reactions of their listeners.

In the B.B.C. the listener-research departments collect and measure the opinions of listeners both in the United Kingdom and overseas. At home, some thousands of people, collectively making up a 'cross-section' of the population, are questioned each day by specially appointed investigators. On the basis of the replies, the B.B.C. can measure, in terms of percentages of the listening population, the extent to which each individual programme was heard, and can assess the degree of appreciation it earned. With the aid of voluntary 'panels' of listeners, it can also gather reliable opinions about programmes of specialized interest.

Special committees or councils have been set up, too, to advise on the planning of certain classes of programme schools broadcasting, religion, and charitable appeals, for instance— and there are also advisory committees to help the work of broadcasting in the various regional centres.

BROOKLANDS. This track for testing and racing cars is at Weybridge, Surrey. It was built in 1907 by Mr. H. F. Locke-King, being the first motor course to be contructed in the world. Before 1907 British car manufacturers were handicapped in having nowhere to test their cars, for they were not allowed to test them on the highroads, as were manufacturers in other countries. Brooklands was used for all kinds of motor testing and racing until the Second World War. It was then used for other purposes, and at the end of the war was purchased for industrial development. In its early days it was also used for testing aircraft.

Brooklands track was an oval 100 ft. in width, measuring 2 miles 1,350 yds. to a lap. The two curves were struck at a large radius, the sharper at 1,000 ft., and were steeply banked. The steeper banking reached 28 ft. 8 in., a gradient quite difficult for a man to climb. The finishing straight, 991 yds. long, ran out across one corner of the track, and cars turned into it after covering the last lap. In course of time, however, the speed of the cars became too fast for them to be able to pull up in the space available. A test hill with an average gradient of 1 in 5 opened out of the finishing straight.

See also MOTOR RACING.

BROWNIES, see GIRL GUIDES.

BUGLE, see BRASS INSTRUMENTS, Section 7.

BULLFIGHTING. The true historical origin of bullfighting is uncertain. In the architecture of the bull-ring, as in the bloodthirsty essence of the combat, there is an obvious similarity to the GLADIATORIAL GAMES (q.v.) of pagan Rome. The formalized ritual, on the other hand, is more closely related to a religious sacrificial ceremony.
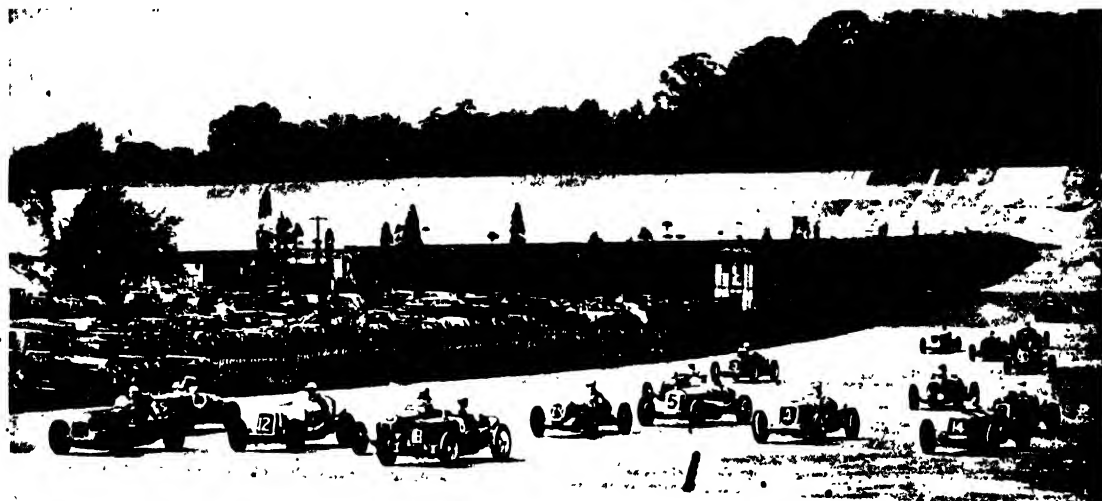
MOTOR RACING AT BROOKLANDS
The massed start of the International Trophy Race, August, 1937. *New York Times*

A primitive form of bullfighting was introduced into Spain by the Moors. This was a simple contest in which mounted men with lances fought and killed savage bulls in the ring. Kings and nobles vied with each other in the sport. By degrees the spears they used were shortened, so that more daring and closer manœuvring were required to deliver a fatal thrust. This culminated in the dismounting of the bullfighter and the reduction of his short spear to a sword. By the beginning of the 18th century the mounted lancer took only a subsidiary part in the fight.

The modern bullfight is conducted in a circular outdoor arena resembling the Roman Colosseum. Two or three *cuadrillas*, or teams, alternate in fighting six bulls during an afternoon. The average fight lasts about 20 minutes. The *cuadrilla* consists of a *matador* (or killer), who is the star of the show, assisted by two *banderilleros*, two *picadors*, and a number of *peones*, or general helpers. The word *toreador* in Spain applies only to exponents of the old system of fighting bulls from horseback, but was adopted by the French to apply to all bullfighters, a misuse of the word which Bizet's opera *Carmen* helped to popularize. The bulls used are only distantly related to the cattle we raise for food: they are bred entirely for their strength and savagery.

When the bull is let into the ring, the *peones* simply run away from it, encouraging it to make reckless charges; while the *matador* watches and sums up its individual characteristics. As soon as he thinks he knows enough about it, he steps into the ring with a large cloak and receives the bull's attack himself. Bulls are colour-blind, and red has no more influence on them than any other colour. Their instinct when enraged is to charge anything that moves, and it is only the movement of the cloak, or *capote*, in the hands of the *matador* which provokes them. His object is to induce the bull to follow the cloak, missing his own body in its pursuit of the cloth. There are a large number of classical passes to be made in this manner, and the bullfighter's object is not simply to escape injury, but to perform smooth and graceful movements as stylized as those of the ballet. The quality of his work is judged by its grace and by how closely he dares to let the bull pass him.

The next movement is the planting of the *banderillas*. These are barbed darts, about 2 feet long, which the *banderillero* holds, one in each hand, while he incites the bull to charge him. At the last possible moment he is supposed to plant them close together, one on each side of the hump at the root of the bull's neck, and swerve aside in time to avoid being gored. Sometimes a *matador* who fancies himself will plant the *banderillas* himself. The object of the *banderillas* is to enrage the bull further.

Then the *picadors*, or lancers on horseback, are brought on, and the bull is incited to charge them. The *picador* receives the charge on the point of his spear, which he is supposed to plant in the bull's neck between the *banderillas*. A guard on the point prevents it entering more than 3 inches. A good *picador* with this weapon will often be able to prevent the bull from reaching his horse at all; but usually some horses will be gored and disemboweled. This is considered desirable because it encourages the bull, which up till now has achieved nothing more than sticking its horns into a fluttering piece of cloth. Each time the bull finds its mark, it is the duty of the *matador* to perform the *quite*, to take the bull away from the fallen horse and rider by luring it into another series of movements led by his cloak. These follow the same patterns as the first passes, but should be better and closer, since the bull's attack is steadily becoming more methodical.

The last movement is performed with the *muleta*, a much smaller piece of red cloth draped over a stick. Again the bullfighter tries to describe a series of classic figures displaying his complete control and dominance of the bull. This should be the climax of his act. At the end of it he aims his sword, and either goes to meet the bull or stands and receives its charge, thrusting the sword in over the horns and into the same spot marked by the *banderillas* and by the lances, driving it in up to the hilt and through the heart. With a perfect thrust the bull should drop dead in a few seconds.

It should not be forgotten that bullfighting is not intended to be a sport. It is impossible for the bull to win; and although bullfighters are frequently killed and injured, this is only because of their bad luck, carelessness, or overconfidence. Nor are the bullfighters competing with each other athletically. No great physical strength is required for bullfighting, and even agility is at a discount, since a man who merely jumped out of the way would be laughed out

A BULL FIGHT

Painting by Francisco Goya (1746-1828). In one arena the matador flourishes the cloak at the bull, while the bande-illero stands ready; in the other the picador is shown about to receive the bull's charge
Metropolitan Museum, N.Y.

of the ring. The competition between bull-fighters is to please the public by trying to display the most artistic style and form, com-bined with the greatest daring, short of getting themselves impaled. The question of cruelty to animals, therefore, so obvious to other people, does not occur to the devotee of bullfighting, since this is considered of less importance than the artistic spectacle. Bullfighting under the same rules was introduced by the Spaniards into most Latin American countries. In Portugal; and occasionally in parts of France near the Spanish border, a form of bullfighting is practised in which a bull's horns are padded, no horses are used, and the bulls are not killed, but this is regarded somewhat scornfully by disciples of real bullfighting.

See also Vol. I: SPANIARDS.

BUMPING RACES, *see* BOAT RACES, Section 2.

BUSKERS, *see* STREET ENTERTAINERS.

BUTTERFLY AND MOTH COLLECTING.
The main equipment needed for butterfly and moth collecting is a net, a killing bottle, and setting-boards. The net should have a collap-sible frame, either round or pear-shaped (a 'Kite' net), and a bag of black transparent material. Specimens are best killed with cyanide of potassium; a killing-bottle may be supplied by any chemist. 'Setting-boards' are short battens of corks, from 1 to 5 ins. in width, paper-covered, with a groove down the centre of the upper side. A pair of entomological for eps is useful for removing the special pins used for mounting specimens.

When the insects have been killed, they are left for 24 hours to relax before they are set. To set them a pin is inserted through the thorax, and the body is pinned into the groove of the board. The wings are then gently pushed up into position with a fine needle mounted in a handle, until the inner (or lower) margin of the fore-wings is at right angles to the body. In this position the wings are secured by strips of paper pinned across them, and left for at least a fortnight. After removal from the board, each specimen is given a label stating the locality and date of capture, and is then stored either in cork-lined, air-tight boxes made for the purpose, or in a cabinet consisting of a number of glass-topped drawers, where they must be protected against mites with naphthalene or some such substances. The collection should be arranged by families, with a label giving the Latin and English names under each species. Nowadays, collectors attach so much importance to data labels that even the rarest insects are almost valueless without them. Accurate labelling makes the collection far more interesting and useful for reference purposes—as in cases where a particular species differs in appearance in different localities; the Annulet Moth, for example, is whitish on chalk but nearly black on peat land. Where a species is found in large numbers, variation in colour or marking often

MOUNTING A BUTTERFLY
From Vere Temple, 'Butterflies and Moths in Great Britain',
B.T. Batsford, Ltd.

occurs, and some collectors specialize in studying and illustrating these aberrations.

Without doubt the best method of collecting a good set of any species is by breeding. Most female butterflies will lay eggs, if placed in the sun in a cage containing the living food-plant; and most moths will lay in 'pill-boxes'—the glass-bottomed boxes used for bringing home live insects. Caterpillars are reared in cages which admit light and air. They need a constant supply of fresh food-plant, and the cages must be kept free from mouldy litter. The pupae of most butterflies are suspended on the food-plant, or on the sides or top of the cage; but most moths pupate in the ground, and they need two inches of damp sand, earth, or peat in the bottom of the cage. Specimens should not be killed until at least 2 hours after they have emerged, in order that their wings may have had time to develop and dry.

In cases where breeding is difficult, the insect must be caught on the wing. The majority of moths fly at night, and must be caught at night — either by attracting them to a light, by 'sugaring', or by searching for them on special flowers. A light shining on to a white sheet spread out on the ground will often produce good results. Flowers commonly visited by moths include tobacco-plant, valerian, buddleia, marram-grass, heather, and ragwort. Sallow-catkins in early spring and ivy-bloom in late autumn may be tapped sharply with a stick to make the moths fall into a receptacle held underneath.

Sugaring consists in painting tree-trunks, posts, or palings with a special 'sugar', made of treacle, sugar, and stout, flavoured with jargonella (essence of pear), which is strongly scented and will attract moths from a considerable distance. The sugar is spread on tree trunks or posts at dusk and left for the moths to collect on it. Later it is examined, and all promising specimens are boxed for the night. They should be examined carefully the following morning, to avoid knocking off into the killing bottle a female that would be worth far more alive, for egg-laying. Spring and autumn are the best seasons for sugaring, but it can be done the whole year round.

See also Vol. II: BUTTERFLIES; MOTHS.
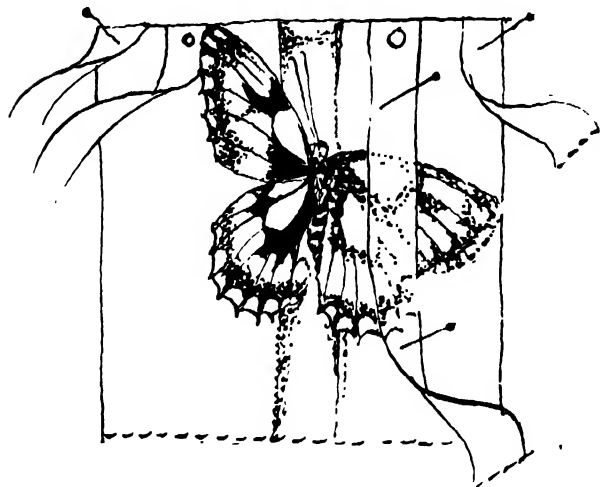
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CÁBARET, *see* MUSICAL COMEDY.

CABER, TOSSING THE, *see* HIGHLAND GAMES.

CAGE BIRDS. Many species of birds may be kept in captivity, either in cages or aviaries. They are chosen and bred for their song, the brilliance of their plumage, or their ability to be trained to speak. For thousands of years the Chinese have kept song birds as pets, and they were bred for their plumage by the people of ancient Mexico and of Egypt. In England all kinds of finches have been kept as pets for centuries, canaries having been introduced in the 16th century by emigrants from the continent. Parrots, parakeets, and other exotic birds have also been popular for a long time. In country districts jackdaws and magpies are often tamed. These are usually hand reared, either having been taken from the nest or found injured and nursed to health. They become very tame and can be taught to speak; but, however tame they grow, they do as a rule eventually fly away (*see* CROWS, Vol. II).

To-day, in Europe, America, and the Dominions, clubs and societies foster the breeding of canaries, budgerigars, parakeets, lovebirds, finches, and others. There are approximately one thousand cage-bird societies in the British Isles alone, and these organize a great many exhibitions.

The canary is a finch, found wild in the Canary Islands, Madeira, and the Azores, its natural colour being yellowish green, mottled with brown. There are several other species of the same genus (the serins) one of which is common in south Europe, but none possesses the sweet song of the true canary (*see* FINCHES, Vol. II). Its domestication dates from the 16th century; and, as a result of careful breeding and selection, not only has its colour been changed to a clear yellow, but also its size has been increased, its song improved, and many distinct breeds have been established, one entirely white and others blue and fawn. Canaries have been used for testing the air in mines and other such places, because they are soon affected by the presence of poisonous gases.

Canaries should be fed on a mixture of canary and rape seed. They can also have a little milk sop and biscuit occasionally, and they enjoy a piece of sweet apple. They need a constant supply of fresh water and grit, as well as cuttlefish which contains valuable mineral salts. They should keep in vigorous health for years.

Budgerigars are small Australian parakeets. Their normal colour is grass-green on the breast and underparts, with yellow face, and yellowish upper parts, barred with dark grey. The tail and wings are partially blue, and there is a patch of deep blue on the cheek and black spots on the throat. The young birds are barred on the forehead. As a result of domestication, several colour varieties, including various shades of blue, have been evolved, and even the pure white variety is not uncommon.

Budgerigars are fed on canary seed and millet,
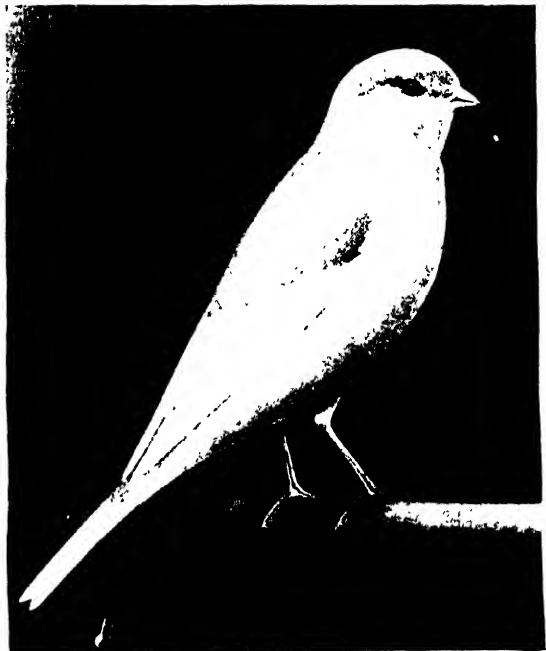
A BORDER FANCY CANARY
R. A. Vowles

A SKY-BLUE BUDGERIGAR COCK
Ernest Marriage

with buckwheat, persicaria, and the seeding heads of grasses. They also need fresh water, grit, and cuttlefish. They have no song, but young cocks, taken from their parents at an early age and caged by themselves in a living-room, will, if spoken to frequently, pick up words and even short sentences.

Other exotic cage birds are the Java sparrow, which comes from Java and Sumatra, and the Bengalee, which is a finch bred by the Japanese. The Java sparrow is smaller than the common sparrow; it has a slate grey plumage with a pinkish tinge, white cheeks, black head, throat, and tail, and a short pink bill. Bengalees are of various colours, white, and piebald. They live well in cages, and will build nests and lay and hatch their eggs with little trouble.

Various kinds of PARROTS (q.v. Vol. II), particularly the grey parrot, the green parrot, the brilliantly coloured macaw, and the cockatoo, have long been popular as pets, chiefly, perhaps, because of their power of imitating human speech. It is said that Roman ladies taught their parrots to say 'Hail, Caesar!'. Parrots and budgerigars cannot, of course, talk with intelligence; all they do is to imitate sounds and to associate certain sounds with certain actions. 'Scratch poor Polly' may be rewarded with a caress, or 'Piece of sugar' with the hoped-for reward. Even without reward they will imitate the sounds they hear around them: indeed, at one time parrots brought home in the fo'c'sle of ships had a bad name for swearing. The composer Haydn had a parrot who could whistle one of his master's compositions, and another parrot was reputed, in 1802, to be able to sing the 104th Psalm.

Parrots are easy to house, requiring only a cage or a perch, and they often live to 50 years of age or more. Parrots, especially the green Amazonian variety, are subject to psittacosis, or parrot-fever, which can be transmitted to human beings; but outbreaks of this disease in the British Isles have been extremely rare.

A number of small birds are best housed in a garden aviary. This should have a shelter and room to fly, and should be sheltered from the wind by a wall or fence. If the shelter is cosy and draught-proof, most species can be housed in such an aviary throughout the year without artificial heat.

See also PETS.
See also Vol. II. BIRDS.

AN AFRICAN GREY PARROT
P. A. Reuter

CAMERA, *see* PHOTOGRAPHY.

CAMPANOLOGY, *see* BELL RINGING.

CAMPING. An endless variety of holidays is available for the camper in this country and abroad. Walkers and cyclists, carrying tiny tents weighing less than 2 lb., can visit remote and unfrequented parts of the country or join the communal life of a large camping site. Families can set off with a couple of tents in the boot of their car or trailing a well-equipped and roomy caravan. Camp life may be simple; but the camper soon learns that it need not be primitive, and that the success of a camping holiday depends on the efficient organization of equipment, site, and routine.

Caravans may be small enough for a low-powered car to trail, with telescoping sides and streamlined curves to minimize wind resistance; or they may have two compartments and four berths, with attachments for a lean-to tent to provide an outside kitchen or additional sleeping quarters. They are planned inside as efficiently as a ship's cabin, with every inch of space used to store equipment, cups and plates being fixed so that they will not rattle. Caravans often have jacks at the corners so that the wheels can be relieved of weight when the caravan is pitched.

The best tents are made of fine cotton which is lighter than canvas, and, though not air-tight, will keep out the rain unless the inside of the tent is touched. Waterproofed material keeps the rain out more securely, but, because it is air-tight, it may become wet inside from condensation. A fly-sheet over the tent will make it absolutely waterproof, and the layer of air between the fly-sheet and tent will keep the inside warm at night and cool during the day. Overhanging eaves also give protection. The 'Itisa' is a small tent for one or two people. It is conical in shape with a centre pole which can be used as a walking-stick during the day. It has no door, although a flap can be attached at night. It weighs less than 2 lb. and can be folded into a tiny parcel. Two-poled tents may be as light as the 'Itisa' or large enough for a family. The small ones are generally about 4 feet high at the door, sloping to a shorter pole at the back; larger ones are 5 ft 6 in. or more at the ridge, with sides up to 2 ft. 6 in. high. The 'Cottage' or 'Alaskan' tent has an extension beyond the
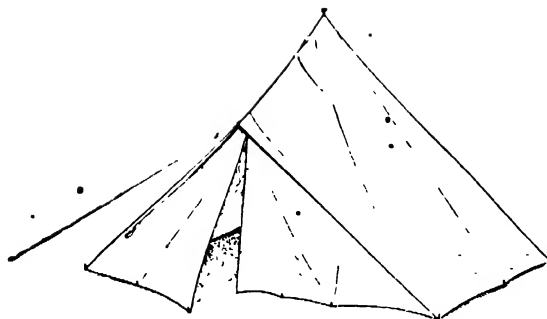
AN ITISA TENT

tent pole which provides a sheltered place for cooking and washing. A waterproof groundsheet is essential. The tent is held in position by guy ropes leading from the poles and eaves and pegged to the ground, preferably with wire pegs. The sides of the tent are also pegged. The guy ropes should be kept taut during dry weather, but slackened during the wet weather, when the material will shrink and the pole may be forced through the tent top.

A sheltered spot should be chosen for the tent, on firm ground which will hold the pegs. The tent should be pitched with the back to the wind so that the front flap can be kept open day and night for ventilation. During the day the sides may be raised to air the tent thoroughly. The best site is near a river or the sea where bathing is possible. A supply of fresh water near by is important, for water is heavy to carry.

Sometimes it is difficult to find a suitable site, and it may be dusk by the time the tired and hungry party starts pitching the tent. To get settled and fed as quickly as possible, each member must know what to do and be able to do it in any weather. First the tent is erected and the bedding and other belongings stowed inside. Then a fire is made or the Primus stove lighted. A shallow trench, tapering in width, with the wide end facing the wind, should be dug for the fire. If the bottom is lined with
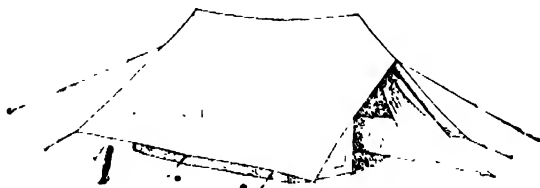
AN ALASKAN TENT

COOKING OVER A PRIMUS STOVE
D. W. Gardner

flat stones it is easier to clear the ashes. Other stones at the sides will support the cooking pots. It is wise to collect a good supply of wood before the fire is started: ash, pine, larch, birch, beech, and oak all burn briskly, but elder, elm, and all touchwoods are slow and difficult.

The latrine must be dug at least 5 ft. in length by 2 ft. deep, and should be earthed after use, and filled in and returfed at the end of the stay. Garbage and rubbish of the fire are burned every day. If the ashes of the fire are raked away and the rubbish thrown on to the hot stones, it will dry and then burn easily.

Campers must carry the minimum of equipment and store everything in the smallest possible space. Neatness and order are therefore essential in a tent or caravan. Campers soon find what equipment is needed: frying-pan, dixies, enamel plates, canvas water-bucket and wash-basin are among the essentials. The bedding should be light but warm: a quilted or blanket sleeping-bag is snug, and an air cushion makes a good pillow. Cotton blankets absorb moisture; loosely-woven wool gives the greatest warmth. Warmth at night is achieved by having protection underneath rather than on top. The hobo's trick of putting a thick layer of newspapers beneath the blankets is worth adopting.

The Camping Club of Great Britain looks after the interests of campers in this country and is associated with other clubs on the Continent and in America. It issues a list of sites and owns a number of camping grounds in the Home Counties. Local clubs often arrange camps, and camping plays an important part in BOY SCOUTS, GIRL GUIDES, BOYS' BRIGADE (qq.v.), and other Youth organizations. Campers must always obtain permission from the owner or tenant of the land before pitching their tents. As a rule they are not allowed to camp on common land or on the roadside.

CANARY, see CAGE BIRDS.

CANOEING. The canoe was the first efficient form of water transport devised by man, and it is interesting that its most modern development should be a partial return to the very earliest type of construction. By definition a canoe is a. craft which is light enough to be carried overland by its crew; it has a draft enabling it to float in the minimum of water (4 inches will float a light canoe), it is pointed at both ends, and is propelled by paddles. The first canoes were probably primitive bark canoes, examples of which have been discovered in several parts of the world, as have also various forms of skin-covered canoes. The dug-out canoe is now generally believed to have been a later development. The typical Canadian canoe was the ultimate development of the bark canoe, just as the modern collapsible folding canoe is a development from the earliest type of skin-covered boat.

Canoeing was first taken seriously as a sport in this country towards the end of the last century, as a result of the pioneer tours of John MacGregor in his canoe, described in his book *A Thousand Miles in the Rob Roy Canoe*. These tours became famous, and a club, which subsequently became the Royal Canoe Club, was formed to popularize the sport. The club's activities were first directed to cruising; but inevitably racing soon became popular. The sailing canoe, too, was soon evolved, the late Lord Baden-Powell being one of the pioneers of this form of sport in his sailing canoe *Nautilus*.

By the beginning of the 20th century canoe clubs in Great Britain were arranging numerous REGATTAS (q.v.) for both paddle and sail, and their members had explored all the English rivers and were making adventurous pioneering cruises on Continental waterways. Most of these cruises were undertaken either in the 'Rob Roy' canoe (a long, sharp-pointed and decked type, rather like a rigid Eskimo *kayak*), or in Canadian canoes, which had begun to be imported in large numbers from America, where they had been for many years an essential means of transport. The rigidity and weight of both of these types of canoe made their transport by road or rail a matter of difficulty, and so restricted their cruising range.

After the First World War the sport of wild-water canoeing, that is to say canoeing on rapid rivers, was taken up with great enthusiasm in Germany and other countries, and the folding canoe was developed. This consists of a collapsible wooden framework which stretches and supports a skin of rubberized fabric. These canoes are extremely light—a typical single-seater weighs less than 80 lb., and can be dismantled in a matter of minutes and packed away into two easily transportable carrying bags. The result of this development was to make it possible to canoe on all the waterways of Europe, and to bring about an immense increase of interest in the sport, which was soon internationally recognized.

The International Canoe Federation was established in 1924 to control the competitive side of canoeing, and regattas were held at
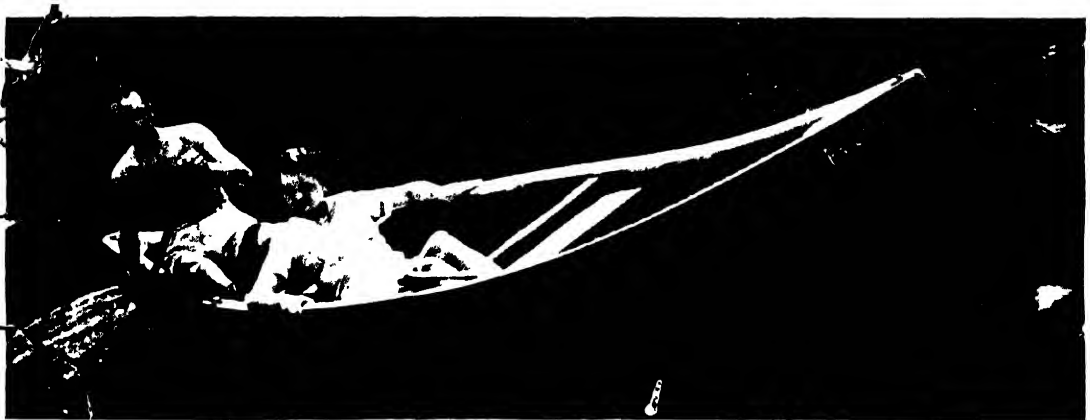
THE CANADIAN TYPE OF CANOE
Paul Popper

CANOEING ON THE RAPIDS AT LLANSANTFRAID-ON-USK,
SOUTH WALES, IN A ROB ROY CANOE
B. Seager

Prague and Copenhagen in 1933 and 1934. By this time Britain, who originated the sport, had fallen far behind in developing it, and when in 1936 canoe events were for the first time included in the OLYMPIC GAMES (q.v.), Great Britain had considerable difficulty in finding and training suitable competitors. Eventually, she was represented only in the single and double folding canoe events. Among the events which are now accepted for international competition by canoers is the *slalom*, named after its similarity to the *ski slalom* (*see* SKI-ING). It is an attempt to combine as many wild-water conditions as possible in a fixed event. The course is laid out on a fast stretch of water, and difficult situations are provided by the erection of artificial obstacles. Such events are a striking test of skill, courage, and endurance, and provide a fine spectacle coupled with exhilarating sport. Wild-water canoeing is a great and growing sport in the true British tradition. The 1948 OLYMPIC GAMES (q.v.), which were held in England, included canoe championships, which took place on the HENLEY REGATTA course (q.v.).

See also Vol. IV: CANOE.

CARAVANS, *see* CAMPING.

CARD GAMES. 1. There are innumerable games which can be played with a pack of PLAYING CARDS (q.v.), because of the great number of ways in which the fifty-two cards of the pack can be arranged. These games combine luck with skill in varying degrees. Pure gambling games such as Chemin de fer, which are illegal in Britain, are entirely a matter of luck: so also are some of the popular nursery games, such as Beggar My Neighbour, and some

of the PATIENCE games (q.v.). On the other hand, in games such as POKER and BRIDGE (qq.v.), the players may be so skilful that the element of luck is of secondary importance. Most card games lend themselves to GAMBLING (q.v.), but can also be scored with counters instead of money.

The fifty-two cards of a normal pack are divided into four suits, Spades, Hearts, Diamonds, and Clubs, each containing thirteen cards. The Ace can count as the highest or the lowest in the pack; the Court cards sometimes count as Knave 11, Queen 12, and King 13, and sometimes all as 10. In some games one or more cards may be treated as 'Jokers', with special powers. The separate Joker card is rarely used. Piquet and Bezique are played with 32 cards, using only the higher values from the 7 to the Ace. Most games use the whole pack, but for some, such as Napoleon (Nap), only a few cards at a time are dealt to each player. Sometimes the players are paired, as in WHIST and BRIDGE (qq.v.); sometimes it is every man for himself; and sometimes the 'Banker' or the highest bidder is pitted against the rest, as in Vingt-et-un or Solo Whist respectively. In most games the player on the left of the dealer shuffles, or makes the cards, and the player on his right cuts them; in this way the possibility of an arranged pack is avoided. Many very old games have their own vocabulary. Piquet, which comes from France, has kept the French names for the moves; the names for the different combinations in POKER (q.v.), such as 'full-house' or 'flush', have spread to other games.

2. 'TRUMP AND TRICK' games are usually played with four players, sometimes paired as partners as in Bridge, sometimes playing all against all. The whole pack is used, and the object is to win the greatest number of tricks — or occasionally to lose tricks. Tricks are played by each player putting a card on the table in turn, the highest card played winning the trick. One suit is chosen as trumps — by bidding in Bridge, by turning up a card in the pack in Whist, or by the first card played; and a card of the trump suit can beat any card of another suit. For instance, if Hearts are trumps, the 2 of Hearts beats a King or Ace of the other suits. In all these games players must, if they can, follow the suit of the card first led: if they cannot, they may play a trump or discard a useless card of another suit. The penalties for 'revoking' (not

EARLY PLAYING CARDS

Top German wood-block and stencil cards of the Tarot type, 16th or early 17th century. *Middle* English hand-coloured wood-blocks, late 18th century. *Bottom* French hand-coloured wood-blocks, c. 1830–40, among the earliest double-headed cards

owing suit) are severe. In most games the
ers winning the highest number of tricks
w the game. These games require concentra-
tion and considerable skill, for the good player
must be able to judge what cards his partner
and his opponents hold, to remember what
cards have already been played, and, therefore,
what cards are left in play against him at each
stage of the game. Variants of the trump and
trick games are those in which the players try
to lose tricks. In Black Maria, for instance,
penalties are scored for tricks containing Hearts
or the Ace, King, or Queen (Black Maria) of
Spades; and the skill consists in avoiding taking
tricks containing these cards.

Nap is played with any number of players,
each having five cards only. Each player states
the number of tricks he thinks he can make; if
he thinks he can make all the tricks, he calls
'Nap', or, if he thinks he can lose all, he calls
'Misère'. Then the highest bidder leads a card
of the suit which he wishes to be trumps, and
the other players combine to prevent him from
making his call.

3. SCORING COMBINATIONS. A number of
games for two players combine the taking of
tricks with the arranging of the hands in certain
scoring combinations. In Piquet, a favourite
gambling game of the 18th and 19th centuries,
only the cards of 7 and upwards are used. Each
player is dealt twelve cards, the remaining
eight, divided into five and three, forming the
'stock'. Each player plays alternately a 'major'
and a 'minor' hand. The major hand may ex-
change five cards from his hand for five in the
stock; the minor hand may exchange three.
Then the players declare their hands, scoring
points for various combinations such as threes,
fours, and sequences. The hands are then
played, and more points scored for the winning
of tricks.

Bezique is generally played with two packs,
using only the cards from 7 upwards. There are
several variations of the game, some using more
than two packs. The players are dealt 8 cards
each, and a card is turned up to show trumps
or 'royals'. The players play out their cards,
drawing one from the pack for each card they
play out. As they play, they declare and score
points for combinations as they are formed. The
combinations consist of fours, sequences, mar-
riages of Kings and Queens, and so on, any
combination in the royal suit scoring at a higher

rate. 'Bezique' is a combination of the Queen
of Spades and Knave of Diamonds, and 'Double
Bezique' (two pairs of these cards) has the highest
value of any.

Cribbage differs from Piquet and Bezique in
that there are no tricks, but the play consists
entirely of making combinations of cards, such as
pairs and sequences, or exact counts of fifteen.
The players have six cards each, from which
they discard two each to form the 'Crib'. They
then play out the remaining four cards in turn,
counting up to 31 and scoring as they play. For
instance, A plays an 8, and B plays a 7, making
15 and scoring 2 to B. A then plays another 7,
scoring 2 for a pair and bringing the count to 22.
If B has a 9 he can bring the count exactly to
31, and score 2. If neither player can reach 31,
the nearest to that number scores one. When the
cards are played out, each player marks up the
score in his hand, the dealer counting any score
which may chance to be in the Crib. The scores
are marked on a special board with holes into
which the markers fit. Cribbage is generally
played with two players.

4. Games in which the object is to assemble
certain combinations of cards range from the

• PLAYING AT CARDS
A coloured mezzotint by Brookshaw, after the painting by
Teniers the younger (1610-1690). *Parker Galleries*

highly skilled Poker to party games such as Rummy. There are many variations of Rummy, but the principle is the same in all. Two packs of cards are used, and a certain number— usually 7 or two—are dealt to each player, the pack then being placed in the middle of the table with one card, face uppermost, beside it. Each player in turn either takes the upturned card or draws a card from the pack, at the same time discarding one from his hand. The object is to collect sequences of one suit or groups of the same number. The player who first gets his whole hand arranged in this way, wins, and the rest count against themselves the cards which they have failed to group. Sometimes the 2 of Spades is counted as a Joker, and can be made to represent any card the player wishes.

5. In another group of games the players either try to get rid of their cards or to get the greatest number of cards. In Sevens the object is to get rid of cards. The first player puts out a 7. After that, players in turn either build up or down from this 7, or put out another 7. If they cannot play, they forfeit a counter. Racing Demon is a game rather of the same sort.

In Old Maid, a very simple pairing game, the players try to get rid of their cards by pairing them off. One of the Queens is without a pair, the other Queen having been removed. The player left with the odd Queen is the 'Old Maid'. In Snap or Cork Grab, also pairing games, the object is to collect as many cards as possible. Each player successively turns up a card, and, when a pair is exposed, the first player to shout 'snap' (or, alternatively, to grab the cork) wins the cards. In Pelmanism, a memory game, the cards are spread face downwards on the table. The players turn up two at a time, trying to find pairs. Cards which do not make pairs are turned down again, and the players must remember where they are.

Some games, of which Happy Families is probably the oldest, are played with special packs. In Happy Families, for instance, a pack consists of sets of families—father, mother, son, and daughter—of bakers, sweeps, doctors, and so on. The game is to collect complete families by guessing in whose hands the missing members are. For Lexicon, a game somewhat like Rummy, the cards have letters on them instead of figures, and the object is to build words.

See also PARTY GAMES; BOARD GAMES.

CARDS, see PLAYING CARDS; CARD GAMES.

CARNIVALS. We now use the word 'carnival' in a general sense to describe a particular kind of public celebration or entertainment which includes a fancy dress procession through the streets. The word comes to us from Italy, where Shrove Tuesday is called the *carnevale*, and is derived from the Latin phrase *carnem levare*— 'to put away meat'. Originally, therefore, the carnival was the festival just before Lent, and it is still fairly lavishly celebrated in Roman Catholic countries. It is a time when people have a 'last fling', finishing up the food and drink and indulging in the pleasures that are to be forbidden during Lent. It owes a great deal to pagan springtime celebrations, such as the Lupercalia and the Bacchanalia of ancient Rome. Originally the festival lasted from the end of Epiphany until midnight on Shrove Tuesday, and in some places it is still celebrated for about 15 days. More often, however, it is confined to a few days or to Shrove Tuesday itself.

Our use of the word comes from the traditional form of the celebration in some continental countries, such as Italy, France, and the Rhineland. The high-light is a procession through the main streets of revellers in all sorts of gay disguises—masks and dominoes, huge grotesque heads, and fancy dress. Elaborate tableaux are arranged and wheeled along on carts, and beauty competitions are held for the election of the Carnival Queen and her ladies-in-waiting. Sometimes a King is also chosen. The revellers try to involve the passers-by in the proceedings by throwing flowers, sweets, and confetti at them —at one time they pelted them with dirt and rubbish, but this was changed in the quieter interest. In Germany the procession includes men dressed as animals, and is accompanied by elephants and bears who collect money from the crowd. The procession clearly borrows its form from early pagan RITUALS (q.v. Vol. I) In France, where the festival is called the *Mardi Gras* ('fat Tuesday'), it is the custom to lead a fat ox through the streets, bedecked with garlands and ribbons, and accompanied by a band of mock priests, in direct parody of a Roman sacrificial procession. The ox is afterwards killed and roasted. Festivities of all kinds are held during the carnival season, such as masked balls and dancing in the streets which are gaily

A CARNIVAL PROCESSION IN NICE ON THE FRENCH RIVIERA
New York Times

decorated with flowers. As in England, pancakes are the traditional carnival fare.

Venice was once one of the centres of carnival celebration, but now the most lavish carnivals are held on the Riviera. In England Shrove Tuesday was once a holiday and a day of celebration; but pancakes are now almost all that remains of the English carnival-time festivities (*see also* TRADITIONAL SPORTS AND CUSTOMS). During the summer holiday season, however, seaside resorts sometimes arrange imitations of the continental carnival, the main feature being a beauty competition for the election of the Carnival Queen.

CAROL SINGERS, *see* WAITS.

CASINOS. These were originally public buildings with music and dancing rooms, to be found in many European towns. Gambling games, however, were soon introduced, and gradually the word began to be accepted as meaning a gambling house, though most casinos contain a restaurant and a ballroom as well as gambling rooms. Casinos are illegal in Britain under the Gaming Acts (*see* GAMBLING). The chief games played in Casinos are Roulette and a variety of purely gambling CARD GAMES (q.v.) of which, in Europe at least, Chemin de Fer or Baccarat is the most popular. In the casinos of the American continent various dice games are popular, chiefly variations of Crap-shooting (*see* DICE).

Roulette, a game of pure chance, is played on a green cloth placed on a table, and marked with figures and other signs, as shown in the diagram. A small white ball is spun in a wheel, which is also divided into numbered compartments. The object of the game is to guess into which compartment of the wheel the ball will lodge after it has been spun; and stakes are placed on the appropriate section of the cloth. There are many methods of staking: even chances may be taken on the winning number being red or black, odd or even, and so on; 2 to 1 chances may be taken on dozens, that is,
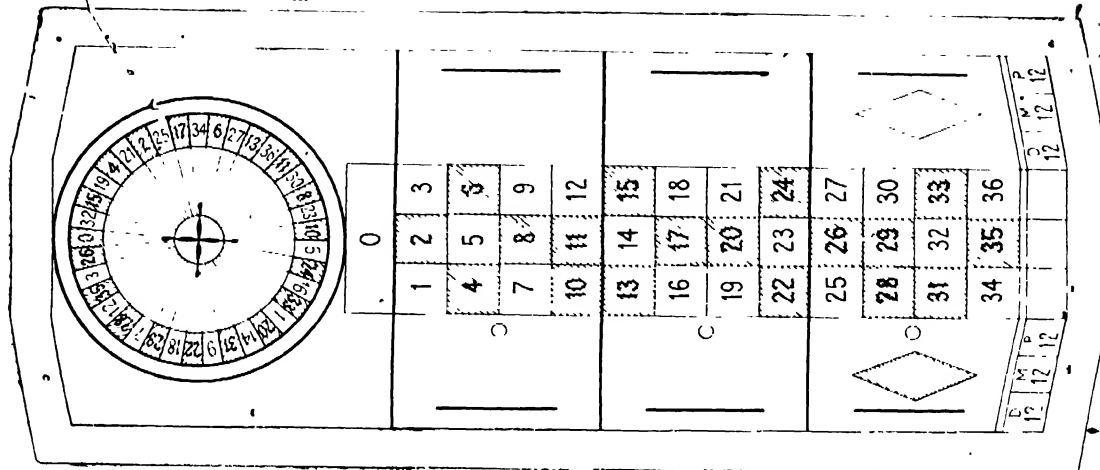
THE ROULETTE TABLE

numbers falling between 1-12, 13 24, 25 36; while varying odds are given on combinations covering two or more numbers. A player staking on a single number and winning is paid 35 times his stake. As with many games, Roulette has a vocabulary of its own. 'Pair' indicates even numbers, 'Impair' odd numbers, 'Manque' indicates the numbers 1 18, 'Passe' 19-36. A croupier employed by the casino operates the wheel, spinning it and throwing the ball into it in the opposite direction to that in which the wheel is spinning.

THE CASINO AT MONTE CARLO
La Salle Schmitt, where Trente et Quarante, Roulette, and other games are played
F N A

The atmosphere of a casino where Roulette is being played is often tense and exciting. People crowd round the table to gamble or to watch the play and the expressions on the faces of the gamblers. A croupier stands at each table raking in the money and telling the people when to place their bets and when to stop. He cries '*Faites vos jeux*' to encourage people to bet, or '*Rien ne va plus*' when no more stakes can be placed for that turn. Many people place only small bets, but large sums of money are lost and won, often in the space of an evening's play.

The 18th and 19th centuries were the great days of the casino in Europe, when throughout France and Germany every famous resort and watering-place maintained well-frequented gambling rooms. Casinos were abolished in Germany by a law of 1868 and in Belgium in 1902. They still exist in France, particularly in the tourist centres. Italy licensed casinos at San Remo and Venice after the First World War to attract tourists, and the then free City of Danzig licensed a casino in 1930. Nevada, which legalized casinos in 1931, is the only state of the U.S.A. to permit gambling houses, though many states of South and Central America have legalized gambling casinos.

The most famous casino in the world is at Monte Carlo, the chief city of the tiny state of Monaco. This casino, first opened in 1856, attracts thousands of tourists to the city every year. Citizens of Monaco are forbidden to enter the gambling rooms, but the state gains so much revenue from the casino that there are no taxes in Monaco.

See also GAMBLING.

CATS, DOMESTIC. The antiquity of the domesticated cat cannot be doubted as there is mention of the cat as a domestic animal in a Sanskrit manuscript written over 2,000 years ago. In all probability it had been domesticated by the Egyptians very much earlier than this, however, as numerous tomb drawings of cats and mummified bodies of them dating from very early Egyptian dynasties have been discovered.

The cat was held in the greatest veneration and awe by the ancient Egyptians, who worshipped it in the form of the cat-headed goddess Bast or Pasht (from which, it is suggested, comes our word 'Puss'), of whom there are several figures in the British Museum. The Egyptians believed that all cats went to heaven—to one of two heavens, in fact, for they believed there was a higher-grade heaven for aristocratic cats, and one of lower degree for others. On the death of a cat, in Egypt, the members of the household would go into mourning and shave off their eyebrows.

The cat as a domestic animal does not seem to have been known to the Assyrians, the Greeks, or the Hebrews, and there is no record of it as such in India until about a thousand years later than in Egypt. It is probable, therefore, that the cat was first domesticated in Egypt. It also seems certain that the breed of wild cat which was domesticated by the Egyptians was the one which is to-day known as the 'Kaffir' cat, a thin, poorly striped, grey cat which is found over the whole continent of Africa.

There are, however, numerous other wild cats in various parts of the world, such as the Jungle Cat and the Flat-headed Cat of India, and the Fishing Cat, which lives chiefly on fish which it hunts and catches itself. There are also the Servaline Cat of Africa, the Tigrine Cat of South America, the Pampas Cat of Patagonia, Hensal's Cat of Brazil, as well as the untameable common European Cat, of which a sub-species is occasionally found in the north of Scotland (*see* CATS, WILD, Vol. II).

Experts are not agreed as to whether the various domestic varieties of cats scattered over the world have sprung from one single species of wild cat, or whether several of the numerous wild types have played their part, together with the cross-breeding of their progeny. There is much to be said in support of the theory that cats are of one species, such as the fact that they all inter-breed freely, as do domestic cats with wild species, and the offspring are invariably perfectly fertile; but it seems equally certain that some breeds did not spring from the domesticated Egyptian cats; for instance the Persian cat is most likely descended from the Pallas' Cat of central Asia, and the lovely Siamese Cat is almost certainly a descendant of the Golden Cat of Malaya.

It is sometimes stated that Siamese cats are the only kind which really form a distinct breed, a theory easily understood if it is accepted that they are descended from the Golden Cat of Malaya. Indeed the pale blue eyes, uncat-like nature, characteristic voice, and the fact

cated cat that they brought; but if it was this species which was brought to Britain, it was probably by the early Phoenician traders, not by the Romans. The first written reference to the domestic cat in Britain occurs in a law made in A.D. 936 by Hywell, Prince of South Wales, for the protection of cats. In this statute a blind kitten was reckoned to be worth a penny, twopence when its eyes were opened, and fourpence when it had caught its first mouse. For killing a cat there was a considerable fine—enough wheat to cover the body of the cat, a milch ewe, a fleece, and a lamb. During the Middle Ages the cat was the only pet animal allowed in monasteries and nunneries. An evil name was, however, soon gained by the cat as an associate of witches, and it was commonly believed that witches, and at times the Devil their master, would assume the form of a cat when they wished to be about evil deeds (*see* WITCHCRAFT, Vol. I). Superstitions, such as that a black cat brings luck and that a cat has nine lives, still survive as a reminder of the magical powers once attributed to cats.

MANX CAT
Thomas Fall

that the kittens are born white and change colour later, make them very distinctive amongst other varieties.

The many varieties of cats are chiefly variations of colour and length of fur. The best-known varieties, besides the Siamese, are the short-haired Maltese; the long-haired Angora, Chinchilla, and Silver, Blue, and Smoked Persians; the rare, hairless cat of Mexico, which was once the pet of the Aztecs; the Orange, and Long-tailed Tabbies; and the tailless Manx Cat, formally known as the 'Cornish' Cat. The Manx Cat with its short forelegs and big hind-quarters, is difficult to explain, as there is only one tailless wild species, the Lynx, and this cannot have been its progenitor. It is most probable that its lack of tail is the result of constant mutation, as is the case with the Old English Sheepdog. Tortoise-shell cats are always female, and ginger ones are usually male—a question of genetics rather than of breeds (*see* HEREDITY, Vol. II).

It is generally believed that the domestic cat was introduced into Great Britain by the Romans, and that it was the Egyptian domesti-
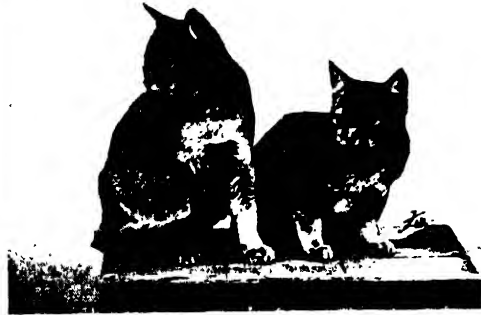

BLUE PERSIAN CAT
Thomas Fall

TABBY CAT
Thomas Fall

ABYSSINIAN CATS
Thomas Fall

It seems likely that the British domestic cat has at least some blood of the Egyptian wild cat but none of the Scottish wild cat, since both the British domestic and the Egyptian cats have black pads, whereas the Scottish wild cat has yellowish pads. The reason why the Scottish wild cat and the domestic tabby resemble each other is probably because a neglected cat often reverts to the wild and breeds with a wild cat, and the offspring from such crosses are invariably untameable.

In calling the cat a 'domestic' animal, we are using the word in a relative sense, for, in spite of the fact that the cat has for at least 3,000 years condescended to make its home with man, it cannot be called a truly domestic animal no other animal having remained so uncompromisingly independent. It is certainly not as entirely dependent on man for its well-being as is a dog, and will on the slightest excuse revert to the wild, where it is entirely capable of fending for itself.

Cats usually keep themselves in good health, and are scrupulously clean; though as a result of semi-domestication they sometimes suffer from parasites, such as fleas and worms, and may contract forms of cat 'flu and other diseases. The normal temperature of a cat is 101·3°, with a pulse rate of 110 to 130 and a respiration of 20 to 30. Their usual duration of life is from 7 to 10 years, although they have been known to reach the age of 24.

Tom-cats are usually castrated when young to prevent the characteristic unpleasant odour which develops in the male when it reaches puberty, and to make them stay at home. This operation makes them grow larger and heavier. Caterwauling is a part of the courtship of tomcats, who will fight their rivals viciously for the female's favour. The female cat reaches puberty at about 6 months old, and then comes in season about three or four times a year regardless of the time of year, each period lasting 7 to 21 days. When mated the period of gestation is 58

SIAMESE CAT
Thomas Fall

TORTOISE-SHELL CAT
Thomas Fall

to 60 days, and the resultant kittens, usually litters of three to six, are born fully covered with hair, but with their eyes closed. They open their eyes after 9 days, and can be weaned at 6 weeks.

At the time they leave their mothers, kittens need four meals a day, mainly of milk and breadcrumbs. As they get older, they begin to eat a little meat or fish, and a little vegetable can be added when they are 2 months old. Lime-water given in their milk every day until they get their second teeth at 5 months, will make the teeth strong and prevent rickets. Grown cats need only two meals a day—fresh, warm, and slightly salted, with any kind of meat and any boned fish, cooked or raw. They cannot eat large quantities at a time, as a kitten's stomach is no larger than a walnut, and a full-grown tom-cat's is only the size of an orange. Cats should always have plenty of drinking water, and should be allowed to come and go freely. Well-fed cats catch the most mice.

The old-fashioned idea that cats can see better in the dark than in daylight is a fallacy; but the irises of cats' eyes can open very wide to enable them to see well in a bad light—useful to animals with partially nocturnal habits. Cats' eyes shine in the dark (as do those of some other animals) because of an iridescent pigment which lines the eye immediately behind the light-sensitive surface. When light falls on this pigment, brilliant metallic tints are shown up.

See also PETS.

CATS' CRADLE, see PUZZLES.

CELESTA, see KEYBOARD INSTRUMENTS.

'CELLO, see STRING INSTRUMENTS.

CHANNEL SWIMMING. On 25 August 1875, Captain Matthew Webb dived off the foot of Admiralty Pier, Dover, and started to swim straight out to sea. He landed in France 21 hours and 45 minutes later, thus completing the first Channel swim in history. The feat amazed the world, and has since been recognized as the Blue Riband of long-distance swimming. Swimmers of many nations, among them Americans, South Americans, South

A CHANNEL SWIMMER RECEIVING REFRESHMENT DURING THE SWIM
Fox Photos

Africans, New Zealanders, Indians, and Egyptians, have made hundreds of attempts since. So far only twenty-five have been successful.

The distance at the nearest points is barely 19 miles, but the distance covered is more than twice as far. The difficulty of the task is due to the intricacies of the currents. The strong tide from the Atlantic splits in two to pass round the British Isles. One part rolls up the English Channel, and through the narrow Straits of Dover. The other part passes round the North of Scotland and then down the North Sea. The two tides meet head-on twice a day off the mouth of the Thames, near the Straits of Dover. Many strong currents are set up, through which the swimmer's path must be plotted with great care. Off-shore tides are particularly strong; thus, in the closing stages of a swim, the aspirant is called upon to give his best effort after more than 10 hours in the water; and added to that there is the extreme cold of long immersion.

The crossing from France to England has proved to be the easier, and twenty-one of the twenty-five successes have been made in this direction. The fastest crossing was made by the Frenchman, Georges Michel, in 11 hrs. 5 min., on 10th September 1926 (his eleventh attempt); but the swim is not recognized by the Channel Swimming Association. E. H. Temmé —the only swimmer to have swum the Channel in both directions—set up a record for the England to France crossing with a time of 15 hrs. 54 min. on 18th August 1934. This swim, which won the Dover Gold Cup, was the second of two successful attempts; the first from France to England—took place on 5th August 1927.

See also SWIMMING.

CHARADES. This party game originated in France. It is usually an acting game, the actors choosing a word of two or more syllables and then acting it, first each syllable separately and then the whole word. The audience must guess the word. A charade can also be a RIDDLE (q.v.) in the form of a short verse. This kind was popular in the 18th century, an excellent example being the charade on 'Courtship' made up by Mr. Elton in Jane Austen's novel, *Emma*.

My first displays the wealth and pomp of kings,
  Lords of the earth! their luxury and ease.
Another view of man, my second brings,
  Behold him there, the monarch of the seas!

But, ah! united, what reverse we have!
  Man's boasted power and freedom, all are flown;
Lord of the earth and sea, he bends a slave,
  And woman, lovely woman, reigns alone.

The word chosen must, obviously, be one in which each syllable has a separate meaning. In an acted charade the word 'transport', for instance, might be divided into 'trance' (represented by a spiritualist's seance), and 'port' (an after-dinner scene), and 'transport' (a scene of soldiers aboard ship). When the charade is acted, the word represented must be spoken once during the scene, though this can be done as unobtrusively as possible. The scenes are always impromptu, only the outlines being pre-arranged, the action and conversation are spontaneous, and the costumes and properties improvised. The fun depends upon witty improvisations by the actors, who may represent any type of character, including animals. A good description of how the game was played in his day is given in *Vanity Fair*, by Thackeray.

In Dumb-acting, a variant of charades, the actors mime instead of speaking. In this case the audience chooses the word—a word, of course, capable of being represented in mime. They tell the actors only the inital letter, with a clue, such as that it is an animal or an occupation. The actors then perform in dumb-show whatever they think the word to be, and the audience hisses each wrong guess and claps the right one. Dumb Crambo is played in the same way except that the word is always a verb, and the clue is a word that rhymes with it.

See also PARTY GAMES.

CHARIOT RACING. Racing with chariots was the earliest form of horse-racing. It was a favourite sport of the ancient Greeks and Romans, the earliest description of it being in Homer's *Iliad*. Chariot racing formed part of the programme of the OLYMPIC GAMES (q.v.) probably from 776 B.C., and was performed on the fourth day of the Games with much ceremonial. Throughout the decline of the Roman Empire, chariot races degenerated into popular spectacles exciting much interest among the citizens of both Rome and Constantinople.

The chariot was a very light construction on two wheels, open at the back and high in the front, with a long shaft. There was room in it for the charioteer and one other to stand. It was a graceful-looking vehicle and often richly

decorated, with a fine carved head to the shaft. It was pulled by two, three, or four horses. In a two-horse chariot (a *biga*) or a three-horse chariot (a *triga*), the horses were yoked abreast to the shaft. The most common racing chariot was the *quadriga* or four-horse chariot, in which the two inner horses were yoked and the two outer were attached to the chariot by ropes. The charioteer, dressed in a short, sleeveless, fine woollen tunic of white, red, blue, green, gold, or purple, according to the colour of his team, held the reins in his left hand with the ends strapped round his waist and a long goad in his right hand. Successful charioteers, many of whom were slaves, won much honour.

The chariot course or 'circus', where the race was run, was in the shape of an elongated narrow U, with tiers of seats running parallel to the course and forming a crescent round one end. The flat end of the U was occupied by the stalls, where the competing chariots and horses were held in readiness. One of the great circuses of Rome was said to have seating accommodation for 250,000 people. Down the middle of the U, separating the starting course from the return course, ran a low stone wall, called the *spina*, which was decorated with statues and shrines and obelisks. On the *spina*, also, were seven figures of dolphins and seven oval objects, one of which was taken down as the chariots completed each of the seven rounds which constituted the race. The race generally began with a ceremonial procession from the Capitol to the circus, and this added colour and pageantry to a very magnificent scene.

The object of each charioteer was to gain the inner position during the straight drive so as to be able to take the bend at the shortest course. It took great skill to manage four powerful and excited horses in such a headlong gallop without crashing with another chariot or against the boundary wall. Crashes, indeed, happened frequently, and the charioteer was fortunate if he were able to leap clear of the medley of chariot wheels and struggling horses. To add to the excitement of this life-and-death struggle, the
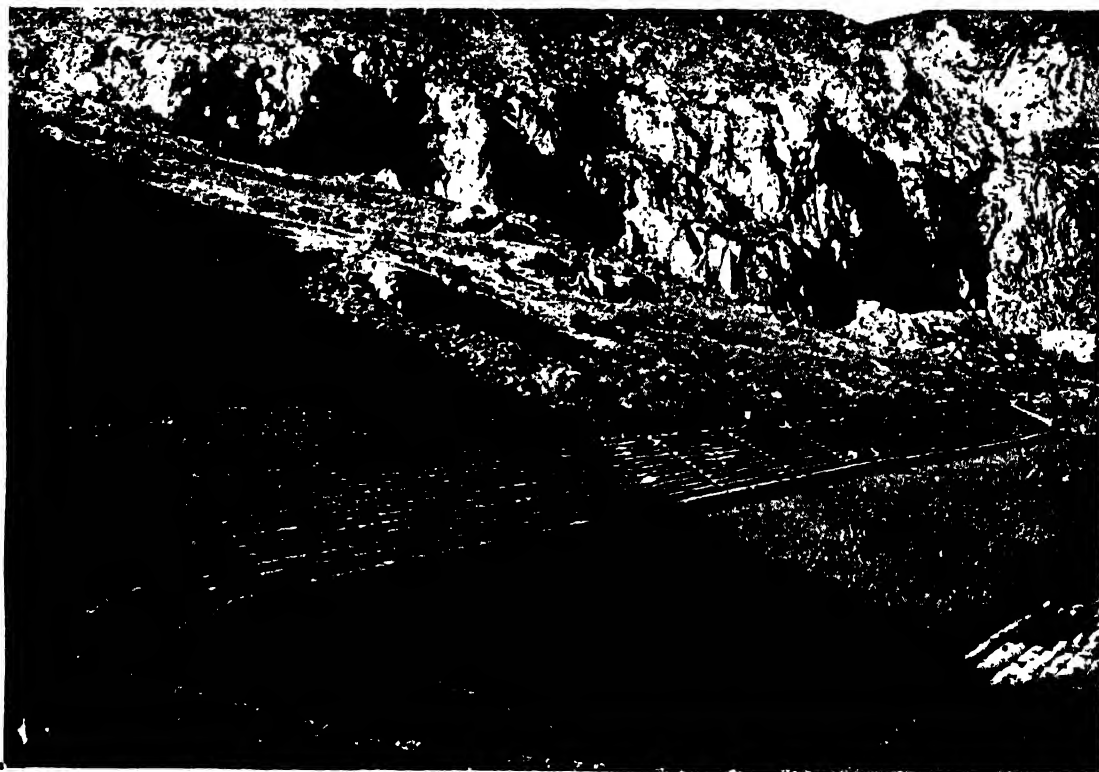
PART OF THE CHARIOT COURSE OR CIRCUS AT DELPHI IN GREECE

GRANDSTAND AND PARADE OF CHARIOTS BEFORE A RACE
Wall-painting from a tomb about 500 B.C.

races, in Roman times, acquired an intense political significance different from that of any other sport of other times or places. Charioteers belonged to a party or faction named after a colour, notably blue or green, and its victories or defeat in the circus involved success or failure in obtaining power at the court of the emperor. At last, when Rome was overthrown, the leaders of the blue and the green factions were still so intent on their quarrels that each side appealed for aid to the foreign conqueror.

CHESS. This is of unique importance among board games throughout the world, and one of the most complicated. Its rules are international and are controlled by the Fédération Internationale des Échecs founded in Paris in 1924. In England there are Chess clubs in all the large towns, including about 100 clubs in London. Some of the newspapers publish chess problems regularly. The game has the advantage that two players at a distance from each other can carry on a game by correspondence, even by wireless. A really good player treats it more like a science than a recreation, and many profound books have been written about it.

1. HISTORY. It is impossible to say when or where chess originated. Various legends accord its origin to China, India, Persia, or Egypt, and traces of it have been found among widely separated peoples. There is no definite evidence of it before the 7th century in Persia, and it appears to have spread to Europe in the 8th century at the time of the great Arab invasion. This early form, substantially the form still played in the East, differed rather from modern chess, which began to evolve during the 15th century. The two earliest surviving printed books on chess belong to the 15th century: *The Game and Playe of the Chesse*, printed by Caxton, and a book by a Spaniard called Lucena. In 1561 a Portuguese, Ruy Lopez, published a work marking the beginnings of modern chess. The game spread to Italy; from there a certain

Paolo Boi toured most of civilized Europe, playing and defeating all the masters of chess, including Lopez. Until the middle of the 19th century, however, there were no players (except perhaps for Philidor in the 18th century) whose play could bear comparison with that of the great modern masters of the game. No single nation has a monopoly of talent, the successive champions from early 19th century onwards being Labourdonnais (French), Staunton (British), Anderssen (Danish), Morphy (American), Steinitz and Lasker (German), Capablanca (Cuban), Alekhine (Russian), Euwe (Dutch), and finally Botwinik (Russian). In Britain the ruling authority in chess is the British Chess Federation, founded in 1904.

2. THE BOARD AND THE PIECES; NOTATION. A chess board has sixty-four squares alternately white and black. Each player has sixteen pieces or 'men' coloured white or black, and the two players move alternately, white having the first move. The board is set up as shown in Fig. 1. Reading from left to right, the pieces are Rook (or Castle), Knight, Bishop, Queen, King, Bishop, Knight, Rook, and the abbreviations used for these are R, Kt, B, Q, K, B, Kt, R. In front of the pieces stand the eight pawns (P) in a line. The board must always be set so that there is a white square in the right-hand corner, and so that the Queen stands on a square of her own colour.

There are two commonly used notations or ways of describing the positions on the board— the 'descriptive', very commonly used in England, and the 'algebraic'. The latter is the simpler, and so we will use it here. The vertical lines of squares on the board are called 'files', the horizontal lines 'ranks', and oblique lines of squares of the same colour are 'diagonals'. The files are named a–h from left to right, and the ranks 1–8 from White's side of the board. The a–d files are Queen's side files, and e–h King's side, and when it is necessary to distinguish the two Rs from each other, we refer

to the QR and KR—similarly to QKt, QB, KKt, KB. We now have a name for every square, and can accordingly record positions or games. This shows how it is possible for people to play the game by post.

In the descriptive notation each file is named after the piece standing on it instead of a–h, so that the files are QR, QKt, QB, Q, K, KB, KKt, KR. The ranks are numbered 1–8, each side numbering from his own back line. Every square, therefore, has two names, one from White's point of view, one from Black's. For example, in the diagram Fig 1, the pawn in front of the QB is on c2 (algebraic notation) and on White's QB2 or Black's QB7 (descriptive notation). It is easy to see that the algebraic notation is the simpler.

3. MOVES OF THE PIECES. The object of the game is to 'checkmate' the enemy King (from Persian *shah mat*, the king is dead)—that is, to attack him in such a way that he cannot escape. Whenever the King is threatened, this must be announced by saying 'check', and if the King can escape he must: if he cannot, the game is finished. Each player tries to weaken his enemy's attack by capturing his men, especially his Queen. All pieces 'capture' by going on to the square occupied by an enemy piece and so removing this piece from the board: they do not jump as in draughts.

The Rook (or Castle) may move any number of squares forward or sideways, that is, along a rank or file, so long as he is not obstructed by his own or an enemy piece. He must stop short of his own piece and may capture the enemy piece. The Bishop may move any number of squares diagonally, and so always keeps on to squares of the colour on which he starts. The Queen, the most powerful of all the pieces, moves any number of squares along rank, file, or diagonal.

The King moves one square only at a time in any direction, but he is not allowed, of course, to move on to a square where he could be captured. The King also has a move performed in conjunction with a Rook (the only move in the game in which more than one piece is used) called 'castling'. (See Fig 2.) This move can be made under the following conditions: (1) that neither King nor Rook has moved previously throughout the game; (2) that the King is not in check when the move is made (it does not matter whether or not he has been checked

earlier in the game); (3) that the King does not move over, or, of course, on to a square attacked by an enemy piece. If these conditions are satisfied, the player may castle. He does this by moving his King two squares towards the Rook and then jumping the Rook over the King on to the square next to it. In Fig. 2 White may castle with his Queen's Rook, the arrows showing how the move is made. He may not castle KR, because f1 (one of the squares the King must move over) is attacked by the Black Queen. Black may castle KR, but not QR, because the Kt is still in the way. Castling is written as Castles KR or o-o for castling King's side, and as Castles QR or o-o-o for castling Queen's side.

The Knight moves sideways in a direction approximately bisecting the angle between the Rook's and the Bishop's move, either one step sideways and two steps forwards, or two steps sideways and one forwards in any direction— this gives him altogether eight possible moves (see Fig. 5). He is quite unobstructed by other pieces in his movements, though he cannot, of course, move on to a square occupied by one of his own pieces. The pawn is the weakest of all the pieces, moving forwards along a file only, one square at a time. To make a capture, however, it moves one square diagonally forwards: it is the only piece which captures in a different way from its normal move. Another peculiarity is that it is allowed to move two squares forward on its first move—a modification introduced to speed up the game in the early stages. Should it succeed in reaching the eighth or farthest rank, it may be given the value of any piece the player chooses, except the King: normally a Queen would be taken. Finally, we have a curious move called *en passant* capture: if a pawn moves two squares and there is an opposing pawn which could have taken it had it only moved one square, then this opposing pawn has the right, for one move only, to capture just as if its enemy had only gone one square.

The aim of the game, as we have said, is to checkmate the opponent's King. In Fig. 3 the White King is in check from the Black Queen. He cannot move into any other position without putting himself again in check from the Black Knight, Pawn, or King. Therefore he is checkmated, and Black has won the game. If, however, as in Fig. 4, the White King is not actually attacked, but his opponent's men are in
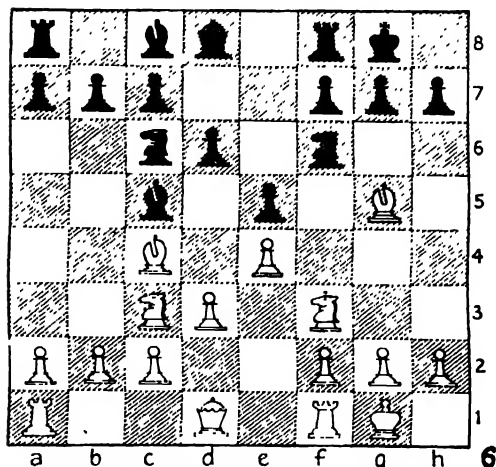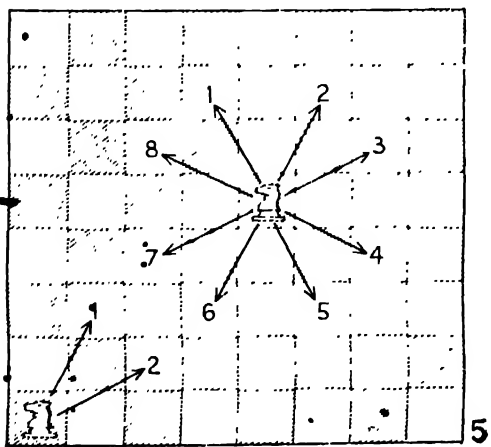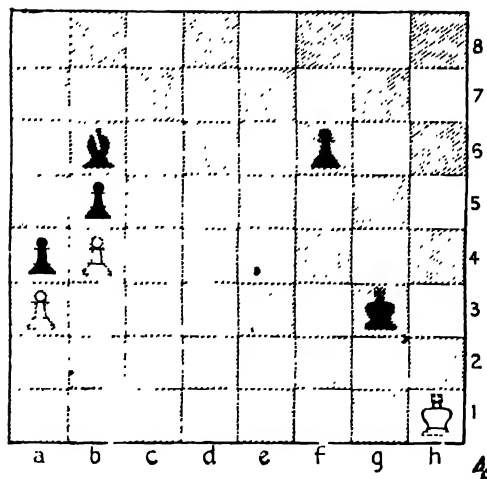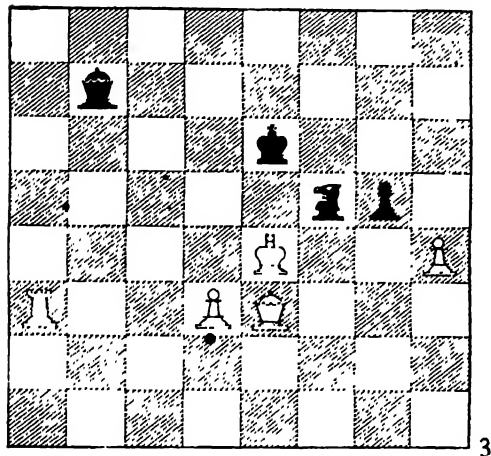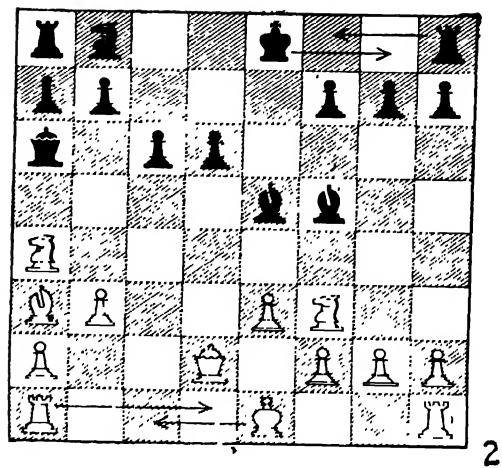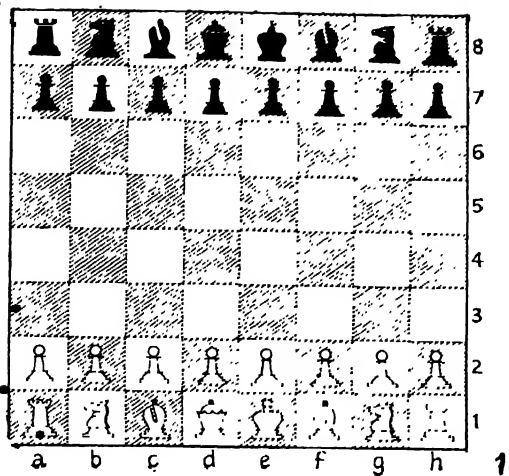
Chess boards showing—1. Starting position; 2. Castling; 3. Checkmate; 4. Stalemate; 5. Moves of Knight; 6. Opening Moves

A GAME OF CHESS
From a French ivory mirror case, c. 1310
Victoria and Albert Mus.

such a position that he can make no move without putting himself in check, he is 'Stalemated', and the game is considered a draw. The attacking player, of course, avoids this conclusion if he can. If one of the men is so placed that it cannot move without putting its own King in check from one of the opponent's men, it is said to be 'pinned' on the King. If a man gets in such a position on the board that it can capture either of two of its opponents, it is said to 'fork' them.

4. VALUES OF THE PIECES. These depend enormously on the particular position; but the following is a rough general guide. With $P = 1$ we have $Q = 9$, $R = 5$, $B = 3\frac{1}{4}$, $Kt = 3\frac{1}{4}$. The Knight is better than the Bishop in very crowded positions, since it is not obstructed by other pieces; in most other positions the Bishop is rather better than the Knight.

5. HINTS ON PLAY. It is impossible in a short article to give more than a few very general principles of the play. All the pieces should be brought into play as quickly as possible—it is never good tactics to try to win with one or two only. It is wisest to play in and try to control the centre of the board, as this gives more room to manœuvre. A Knight, for instance, in a corner of the board has only two possible moves; in the centre of the board he has eight (see Fig 5). A good player will not only make his own plans of attack, but will also try to understand his opponent's plans and to frustrate them if he can. Before making a move he will have a final look round to make sure that he is not moving a piece into danger, or that he is not exposing some vital spot by removing the piece. A player who is learning should start by playing strict 'touch and move', that is, a piece once touched must be moved (if it can move). He should, if he can, practise playing with players rather better than himself. It is much better to read a good beginners' book setting out the basic principles, and from this to work out opening moves, rather than to memorize a few openings from a text-book and try to apply them.

Here is an example showing one way of beginning the game. If the reader remembers the general aims of controlling the centre and developing the pieces, he will have no difficulty in understanding the moves. In recording games White's move is always put first and then Black's. 1. Pe4, Pe5; 2. Ktf3, Ktc6; 3. Bc4, Bc5; 4. Castles, Ktf6; 5. Ktc3, Castles; 6. Pd3, Pd6; 7. Bg5 (see Fig. 6). Both sides have completed their development, and the game is about equal.

6. PROBLEMS. These are a special branch of chess, having little connexion with the game as a struggle between two players. They are positions constructed to illustrate various ideas on the chessboard, the framework for the idea being a task such as White having to mate Black in two moves (see Figure). The result is of no importance; what matters is the artistic nature
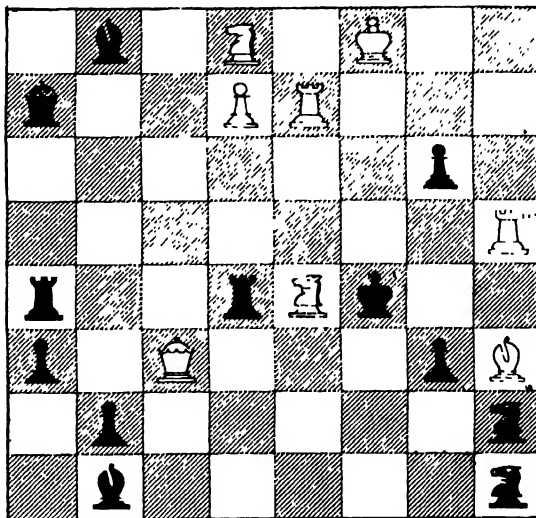
MATE IN TWO MOVES

of the construction. Brian Harley's *Mate in Two Moves* is about the best introduction to a study of problems.

See also BOARD GAMES.

CHILDREN'S HOUR. The first Children's Hour or 'corner', as it was then called, was broadcast in December 1922. The programmes in these early broadcasts were informal and often spontaneous, and consisted mainly of jokes and messages, as well as birthday greetings for individual children, from imaginary B.B.C. uncles and aunts. Soon the greetings list became too long to be practical, and so had to be dropped. In their place the Children's Hour has been built up into a complete broadcasting service for children, aiming at stimulating imagination, directing reading, encouraging a variety of interests, widening outlook, and inculcating Christian principles. It sets out to provide enter-

tainment rather than direct education. It includes talks, plays, music, features, variety, religious services, serials, sport, and outside broadcasts. Typical outside broadcasts are broadcasts from the Zoo or Whipsnade, from the Tower of London or from a police launch on the Thames. The programmes broadcast from the studio, such as the celebrated 'Toytown' plays, are often presented to an audience of children actually present in the studio. The Children's Hour programmes are designed for young listeners between 7 and 13, though they are frequently listened to by grown-ups as well. There are also Nursery programmes for the under 7's.

The staff of the Children's Hour attempts to find out what children feel about the entertainment given them by sending out questionnaires to thousands of young listeners. One popular programme, 'The Children's Hour Request

THE CHILDREN'S HOUR
A nature talk in which the construction of a curlew's wing is described. *B.B.C.*

Week' is built up entirely of requests from listeners, and consists of a series of programmes which have been voted for on postcards naming the six most popular items heard over a certain period: plays are the most popular; music and poetry come lower in the list of chosen items. Talks are regularly given on world and current affairs, and from time to time there are broadcasts by famous people. The Sunday Children's Hour reaches a vast audience, and is set aside for 'peak' programmes. Dorothy Sayers's *The Man Born to be King* was originally written for and produced in the Children's Hour.

The Children's Hour radiates programmes from all broadcasting Regions of the B.B.C. Stories from Scotland for the Scots, and songs from Wales for Welsh boys and girls are included; and the 'Regional Round' is a popular Quiz programme in which young competitors engage in a friendly competition between the Regions. The B.B.C. treats its young listeners as the licence-holders of the future, and accords to them the same respect as to older listeners.

See also BROADCASTING PROGRAMMES; TELEVISION.

CHOIRS. Choirs are groups of singers, usually with different kinds of voices, who sing choral works of music either as part of church services or at concerts at which works of this kind are included. The term 'choral society' means the same, but is generally taken to mean a larger body of singers than a choir, which can undertake full-scale choral works such as oratorios, cantatas, and requiem masses. Choir-singing is largely associated with church-services. It is the task of the choir to lead the congregation in the singing of hymns and responses, and to sing special anthems. In English cathedrals the choir is divided into two parts: the part on the side of the Dean is called the 'Decani', and that on the side of the Precentor is called the 'Cantoris'.

A choir may be either a 'mixed-voice choir' composed either of men and women, a 'male-voice choir' composed either of men only or men and boys, a 'female-voice choir', or a 'double choir', which is divided into two sections, each complete in itself, singing alternatively or together for massed effects.

There are four main types of voices which are found in choirs. The soprano or treble voice takes the highest part; the alto part is taken either by the lower voices of women or by boys; the tenor part is sung by the highest pitched voices among the men; and the baritone or bass part, which forms the groundwork of the harmony, by the men with the lowest pitched voices. Normally there are two ways in which the parts for the four voices are printed: either on two staves with the two highest voices taking the top stave and the two lowest the bottom stave, as:

or printed in open stave where each part is given a line to itself, as for example:

Sometimes the tenor part is written in the treble stave, an octave higher than it is actually sung.

Large choirs and choral societies are often heard in concert halls or on the wireless, giving

THE SINGING CHOIR FROM ROME PERFORMING ON THE STEPS OF THE CITY HALL, NEW YORK. *Paul Popper*

performances of choral works. Many of these choirs and societies, for example, the Goldsmiths' Choir in London, the Bach Choir in Oxford, the Orpheus Choir in Glasgow, the B.B.C. Choral Society, and the Hallé Choir in Manchester have gained wide reputations. As well as these famous bodies there are choirs and small choral societies all over the country, which anyone who is able to sing one of the parts can join. Often the small choirs of village churches attain a good standard of singing. The Welsh, in particular, are noted for their fine choir-singing, and contests between choirs is a feature of the Eisteddfod (*see* MUSIC AND DRAMA FESTIVALS).

See also SINGING; CONCERTS.

CHURCH LADS' BRIGADE, *see* CLUBS, Boys' AND GIRLS'.

CINE-CAMERA, *see* CINEMATOGRAPHY.

CINEMA, HISTORY OF. This is the story of the remarkable development within 50 years of a new form of entertainment. Photographic motion pictures projected on to a screen became available for the general public from about 1895, and by the end of the century they were well established in many countries, notably in France, Britain, and America. But before this there is a long preliminary story of how the necessary machinery, the motion camera and motion projector, came to be invented (*see* CINE-CAMERAS AND PROJECTORS, Vol. VIII).

The earliest pictures, often of astonishingly good photographic quality and steadiness, were intended as popular entertainment features either in the side-shows of fair-grounds or as items in MUSIC-HALL programmes (q.v.). They showed comic-turns, magic and trick pictures, slap-stick, little romances, and even short five-minute dramas. More important were the films recording actual happenings, such as the Derby of 1896, the Boer War, the funeral of Queen Victoria, and those recording travel all over the world. In the earliest years of the cinema its power to show contemporary events vividly was recognized and appreciated. More than anything else this unique quality secured popularity for the film as a new form of instruction and entertainment (*see* FILMS, DOCUMENTARY).

The first films were all short and silent. Acting technique was simple and obvious, like

4852.9

A SHOT FROM THE LUMIÈRE PROGRAMME (1895), THE FIRST FILM SHOWN PUBLICLY IN ENGLAND. *Nat. Film Library*

the dumb-show of a charade. Films made in any country could be sold internationally. The history of the film from 1900 to 1914 is the development as an international industry, led by France, Italy, Britain, and America. During this period, films grew gradually from 10 minutes' length to 2 hours'. The 'star' system developed with the appearance of famous actors and actresses, such as Sarah BERNHARDT (q.v., Vol. V), in the early elaborate historical films of Italy and France. Makers of films began to learn how to tell a story effectively in motion pictures, the pictures taking the place of words. At this period films were making so much money that film-making attracted a different type of people—people who lacked the enthusiasm of the pioneers, and whose aim was to coin money rather than to develop this new art.

During the First World War the demand for films continued to grow at a time when the European producers were least able to meet it. In consequence America became the foremost film-making country of the world, and Hollywood in California, with the advantage of its strong clear light, the chief centre of production. America now supplies 65 per cent. of the world's film demands. She counts her audience in hundreds of millions, for it is estimated that 235,000,000 seats a week are sold in the world's cinemas. America gained this position in the 1920's not only because Hollywood was far away from the European struggle, but also because of the American flair for showmanship. She developed the star-system and film publicity simultaneously, so that the names of artists such as Douglas Fairbanks, Mary Pickford, and Charlie Chaplin were well known to the public

A SCENE FROM 'THE CHAMPION', A CHARLIE CHAPLIN FILM OF 1913
National Film Library

wherever there were cinemas to show their films. Her directors, men such as D. W. Griffith (a great artist) and Cecil B. de Mille (a great show-man), were almost as famous as the stars they created. The cinema became the people's entertainment, lavish, luxurious, often lurid, available almost always to almost everyone at the price of a few pence.

After the war some of the European film industries revived during the short 10-year period left to the silent film (1919–28 approxi-mately). Germany, with directors like Fritz Lang, developed the artificial studio film with remarkable photography, sets, lighting, and acting. The German school specialized in fantasy, horror, spectacle, and melodrama. Russia, nationalizing her film industry in 1919 after the Revolution, made the most remarkable contribution of the period to film art in the work of such directors as Eisenstein and Pudovkin. They used the film to interpret history and the problems of contemporary Russian life, and their films are among the most important in the

history of cinema. France was the home of experiment, especially in the film movement called the *avant-garde*, run by a group of young directors who attempted to devise films to reflect contemporary ideas of psychology and art. The British screen, however, remained almost en-tirely dominated by the American film, which developed its tradition of showmanship and star-display in thousands of shallow, but commer-cially successful, films. The result of American policy was that considerable artists of cinema, such as Lubitsch and von Stroheim, who were working in Hollywood, only rarely produced films of outstanding quality.

The talking film, which had attracted the inventors of the cinema from the earliest days, was first made into a commercial success by Warner Brothers, who released *The Jazz Singer* in October 1927. Sections of this 'film were synchronized with sound, which was recorded on disks, and not, as now, on the film itself. The first complete talkie was *Lights of New York*, released in 1929, and the first important British

dialogue picture was Alfred Hitchcock's *Black-mail*, also released in 1929. Sound greatly increased the artistic possibilities of the film. At the same time it raised the barrier of language—so that the general international distribution of films had to be modified, with great loss of variety to the programme. American films dominated the world; but they now had to be either titled in the language of the country in which they were to be shown, or 'dubbed' with a new foreign sound-track. It has, however, proved possible to caption a foreign film so successfully that, for instance, a British audience could fully enjoy the first German version of *Emil and the Detectives* or the French *Monsieur Vincent* with little or no knowledge of the language.

Britain meanwhile had passed a Quota Act (1927, renewed 1938 and 1948) intended to encourage home production by making it legally obligatory for British cinemas to show a small proportion of British-made films. The results were mostly disastrous from 1927 to 1937, for during this period it merely led to the production of the worst films ever shown on our screens, the so-called 'quota-quickies', cheap story pictures, financed (often by American money) to make easy profits. The Second World War, however, virtually eliminated this appalling trade, and to some extent justified the well-intentioned Quota Act. The succession of competent, often excellent feature-films produced in Britain since 1940 has made the British film industry one of the most significant, though still one of the smaller, film industries of the world. British war films, an important contribution, were made largely under the influence of the Documentary Film, for which Britain had already been distinguished for several years.

The cinema has had a voice for many years. Since 1932 films in colour have become more

A SCENE FROM SHAKESPEARE'S 'HENRY V', A BRITISH FILM OF 1944
Eagle Lion Distributors, Ltd.

A SCENE FROM THE FRENCH FILM, 'THE IDEA', PRODUCED IN 1934

This was the work of the French experimental movement
National Film Library

general, and TECHNICOLOR (q.v.) has been adapted for use in all types of film, and in later years has rapidly improved to its present excellent standard. Inventors are now working on stereoscopic films. Films can argue, inform, and demonstrate as well as entertain: but entertainment is their chief function. The cinema has become part of the modern way of life. Over twenty countries produce feature films: almost all countries show them. In Sweden, Denmark, Czechoslovakia, and Mexico, the film has found its own national style of expression. In the Far East (India, China, Japan) too, film-production goes on developing. For the most part the film is like popular writing, made for profit, widely consumed and quickly forgotten. Yet in its brief life the film has demonstrated that in the hands of the artist it is a medium as eloquent and powerful as the novel. And all over the film-producing world artists have emerged to make the films which confirm the existence of a new art—films such as *Intolerance*, *The Battleship Potemkin*, *Ten Days that Shook the World*, *The Passion of Joan of Arc*, *The Love of Jeanne Ney*, *Greed*, *La Grande Illusion*, *Deserter*, *Les Enfants du Paradis*, *Paisa*, and the best films of contemporary France, Britain, Russia, Italy, and America.

See also FILMS.

CINEMATOGRAPHY. **1.** FILMS. Professional films are all taken on and projected from film 35 millimetres wide; but the cameras, projectors, and other equipment needed for this work are so large and expensive that smaller and cheaper ones, using a narrower or 'sub-standard' film, have been produced for amateurs.

These films, which are all practically fireproof, are usually either 16, 9·5, or 8 mm. wide. 16 mm. film, used for the more serious amateur work, has a picture area of 10·5 by 7·62 mm., with perforations or holes down each side. When well projected it will give a picture filling a screen 12 feet wide. The film is usually sold in 50 ft. and 100 ft. lengths, wound on reels, and packed in light-proof cans; 9·5 mm. film, which has a single row of perforations down the centre between the frames, is sold in lengths of about 30 feet, packed in the same way. 8 mm. film is made by dividing down the centre a special type of 16 mm. film with double the usual number of perforations; the frames, therefore, are half the width and half the height of those on 16 mm. film. Many 8 mm. cameras use the 'double-8' system, in which the film is run through once to expose half the picture area, and is then turned round and run through again to expose the other half. Thus there are two different series of pictures side by side on the one 16 mm. film; this is cut down the centre during processing, giving two separate 8 mm. films, with perforations down one side only.

Sub-standard film is made in grades with different speeds, and colour film is also available. Two types of black and white film are in use—'reversal', and 'negative-positive'. With reversal film the reel exposed in the camera is developed to give a negative; this is then changed chemically into a positive copy, which can be shown in a projector. In the negative-positive system the exposed film is developed to give a negative; and this is then used for the printing of positive copies, just as in still photography. Colour film is usually processed to give a single copy, although it can be used to produce either black and white or other colour copies. The price of a reel of reversal film includes the cost of processing; so that when exposed, it is returned to the makers, who process it without further charge. With the negative-positive film, a separate charge is made for processing. Amateurs will usually get the best result with reversal film; but negative-positive film is much cheaper when copies are required. The making of sound films is beyond the means of ordinary amateurs, although 16 mm. sound films can be hired from film libraries for showing in the home.

2. CAMERAS. The many types of sub-standard cine-camera available to the amateur can be divided roughly into five classes—cameras in

the last one being about fifteen times as expensive as those in the first.

(i) Fixed focus, spool loading. These are simple cameras fitted with lenses of very short focal length, able to take objects over a wide range of distances without focus adjustments (*see* PHOTOGRAPHY). As they are usually set for one fixed film-speed (although the aperture is adjustable), they give the best results only in a good light. The camera is driven by a clockwork motor.

(ii) Focusing, spool-loading. These cameras are similar in design to those in class (i) except that they usually have a variable film speed and a faster lens, giving good results over a wider range of lighting.

(iii) Focusing, magazine-loading. This class is similar to the previous one except that the film is loaded, usually in 50-foot lengths, into magazines, like flat boxes, which fit on to the camera. The magazines contain one reel for the unused film and another for the used, the mechanism being driven from the motor in the camera. Thus the user can change the film in the camera very quickly and easily. Many cameras in this class are supplied with a range of interchangeable lenses.

(iv) Turret. This type of camera has on the front a turn-table or turret carrying two or three lenses, any of which can be brought into use by rotating the turret. A range of film speeds is provided, usually up to 64 frames per second, and a series of view-finders to suit the lenses in the turret.

(v) Turret, magazine-loading. These cameras have all the features of those in class (iv), together with magazine-loading, camera speeds from 8 to 64 frames per second, a release for exposing single frames, a handle for backwinding the film, facilities for using an electric motor, and many other attachments for special effects. Such cameras have, in fact, most of the features of 35 mm. studio cameras, and can give as good results as are seen in cinemas.

3. OPERATION. The standard film-speed for silent films is 16 frames per second, giving an exposure of about $\frac{1}{30}$th of a second on most cameras. This speed is kept constant by a governor on the motor driving the camera, and the lens aperture must be adjusted to allow for differences in the strength of the light. With monochrome film, if all the shots are to be of the same density, great care must be taken to adjust the aperture correctly with the help of a photo-electric exposure meter. With colour photography it is even more important to use the right aperture, because the correct rendering of colour depends on it: if the aperture is too great, the film will be too red; if too small, it will be too blue. When a sound track is to be added professionally to a 16 mm. film, it is better if the camera speed is 24 frames per second (the standard film speed for 35 mm. sound films)—although a sound track can, if necessary, be added to a film taken at 16 frames per second. Slow-motion shots—that is, shots where all movement is slowed down—are usually taken at 64 frames per second. Reels of unexposed film should be loaded into a camera or magazine in subdued light or in shadow, although magazines can be changed in bright sunlight.

The camera should be used on a tripod whenever possible in order to avoid camera shake, which gives a most unpleasant jumping effect on the screen when the film is projected. If the camera is to be 'panned'—that is, turned slowly in an arc to follow a moving object or to cover an area—the tripod must be level. If the panning is too rapid, it will be difficult for the audience to follow the action when the film is projected. The camera should be swung from left to right, whenever possible, as that gives a more natural effect on the screen. When following a moving object, it is always as well to start on a still scene if possible, and to leave space in the view-finder ahead of the object as the camera is moved round. It is usually worth while to number each shot or series of shots as it is taken, and to enter details of the shot together with its number in a note-book.

4. EDITING. The various shots required to make the film are cut off with a pair of scissors, the identification number being left at the beginning of each. When they have been arranged in the correct order, the titles are drawn on card or made up from sets of letters and filmed. Finally, the film is built up by cutting out the numbers and any other unwanted pieces, inserting the titles in the right places, and splicing the short pieces together. When much editing is necessary, it is worth while to have a 'viewer', which gives a small picture by directing light through the film. It is then possible to examine each frame, and to do accurate cutting without running the film through a projector.

5. PROJECTORS. Projectors are made for all sub-standard·film, and all sizes are very similar. The main difference among them is in the power of the lamp. The smallest and cheapest use 100-watt lamps, which need no forced draught; the largest ·and most expensive have 500, 750, or 1,000-watt lamps, which usually need to be cooled by a fan, driven by an electric motor. The more expensive projectors have extra fittings which allow a single frame to be projected as a 'still', and provision for rewinding the film rapidly. Most projectors are driven by a 100-volt electric motor, fed through a transformer from the normal house supply, although 12-volt models that will run from a car battery are available. The smaller projectors are quite suitable for use in an average-sized room; but for lecture theatres and halls it is necessary to have one of the larger types with a 750 or 1,000-watt lamp. 16 mm. sound projectors made for amateur use are small editions of the larger 35 mm. machines used in cinemas. For small audiences a white wall or sheet will do for a screen; but for halls and larger audiences screens with a specially prepared surface are best. Two types are used—a smooth silver screen and a beaded screen. The silver screen does not give quite such a bright picture as the beaded one, but the audience at the sides can see quite as well as those directly in front; while the beaded screen gives a generally brighter picture, which is not quite as clear to the audience at the sides as it is to those in the middle.

See also PHOTOGRAPHY.
See also Vol. VIII: CINE-CAMERAS AND PROJECTORS.

CIRCUSES (Latin: *circus*—a ring or circle). A circus is an entertainment given in a ring by various troupes of performers—horses and their riders, liberty horses (horses who work free, without riders and directed by their trainer), acrobats, jugglers, clowns, performing animals —all under the direction of a Ringmaster. The earliest circuses we know of are those of the Romans, but these in no way resembled present-day circuses. The Roman circuses were arenas used at first for CHARIOT RACING (q.v.) and later for GLADIATORIAL GAMES (q.v.). It is not, however, until the latter part of the 18th century that we find the beginnings of the modern circus.

Sergeant-Major Philip Astley was an expert horseman who frequently gave riding exhibitions. On his discharge from the army his commanding officer presented him with a white charger, and with this and another horse he started a riding school in a roped-off ring in a field where Waterloo Station now stands. He married the daughter of a trick rider, and in addition to riding lessons, he and his wife gave riding displays. These were found to be so much more profitable than the riding lessons that Astley put up a roofless wooden building, with seating accommodation, in Westminster Bridge Road. He hired several artists, including a clown, and in 1780 gave the first real circus performance; by 1783, besides an arena for horsemanship, he had added a stage for singing, dancing, and pantomime, the whole being known as 'Astley's Royal Amphitheatre of Arts'. This form of entertainment proved so popular that other circuses were started. Astley's chief rivals were Dibdin and Hughes, who opened the Royal Circus in Blackfriars Road. Later the Royal Circus was managed by Grimaldi, grandfather of the famous Joseph GRIMALDI (q.v. Vol. V)—'Joey' the clown.

The Royal Amphitheatre of Arts was burnt down twice, and after being rebuilt for the second time, was opened by Astley's son, John, in partnership with William Davis, the first man to introduce a camel into a circus performance. 'Grand Military and Equestrian Dramas' became the feature of the shows, the greatest being *The Battle of Waterloo*, which was shown in 1825. In 1830 the lease was taken over by Ducrow, a famous equestrian who had been employed by Davis. The following year Ducrow presented a dramatized version of Byron's poem, *Mazeppa*, which was such a success that the hero, bound to a wild horse, appeared in circuses all over the world for the next 50 years. Ducrow died in 1842, after a fire had destroyed Astley's for the third time. It was bought by William Batty, a well-known circus proprietor, who had the Amphitheatre rebuilt. Astley's was eventually acquired by George Sanger in 1871, and was finally pulled down in 1893.

The circus soon became popular in other countries. Astley and his son, in partnership with Franconi, established the first French circus. Franconi fixed the regulation size of the ring at 13 metres. Also, because of the large amount of travelling he did, he started the practice of living in a caravan. His shows be-
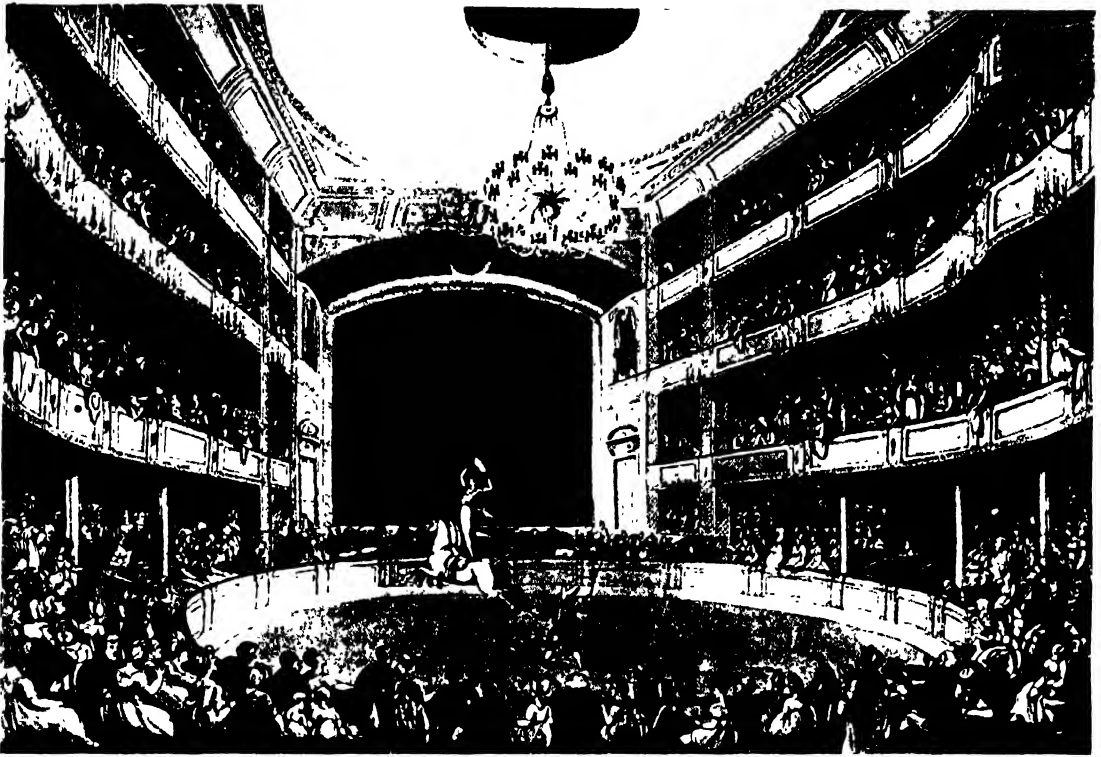
THE FIRST CIRCUS RING

An equestrian performance in Astley's Royal Amphitheatre, from an 18th-century coloured aquatint by Pugin and Rowlandson, 1808

came famous for their scenes of Napoleonic battles. Later, the Paris circus became a social craze, a special feature being the wasp-waisted, top-hatted horsewomen, who won as much favour as the stars of opera and ballet. In Russia circuses performed in the late 18th century, and in Germany they became established in Berlin, Vienna, Hamburg, and Breslau. A circus was performed in Philadelphia in 1785, and by the 1840's shows were travelling by covered wagon all over America. One company went farther afield, to Australia, New Zealand, Honolulu, and Tahiti. In America, where great distances had to be covered, tents were used, the 'big top' for the show, and smaller ones for the stables, menageries, side-shows, and refreshment rooms.

As well as the permanent shows, such as Astley's Amphitheatre and the Royal Circus, travelling circuses, known as 'tenting' circuses, were introduced into this country in the early 19th century. These early tenting circuses were small, having three or four horses, a clown, and

possibly a few tumblers and a tight-rope walker. Their pitches were usually at fairs. There was no set time for the show to begin, this depending on how soon the seats were full; and the show was repeated as often as the seats could be filled. Frequently the horses were lined up outside, the clown made jokes, and the acrobats performed tricks, until sufficient people had paid to see the performance.

In addition to the artists, a tenting circus in those days employed the tent-men, who were responsible for erecting and taking down the tent, drivers for the wagons, a wheel-wright, and a shoeing-smith. To-day there are also electricians to look after the lighting and electrical equipment, and engineer mechanics to see to the machinery connected with the circus. Until 1914 tenting circuses were all horse-drawn, but after the First World War motor lorries and tractors were used to move the show from one place to another. To-day circuses usually travel by train. Bertram Mills's Circus takes three trains to accommodate all the artists,
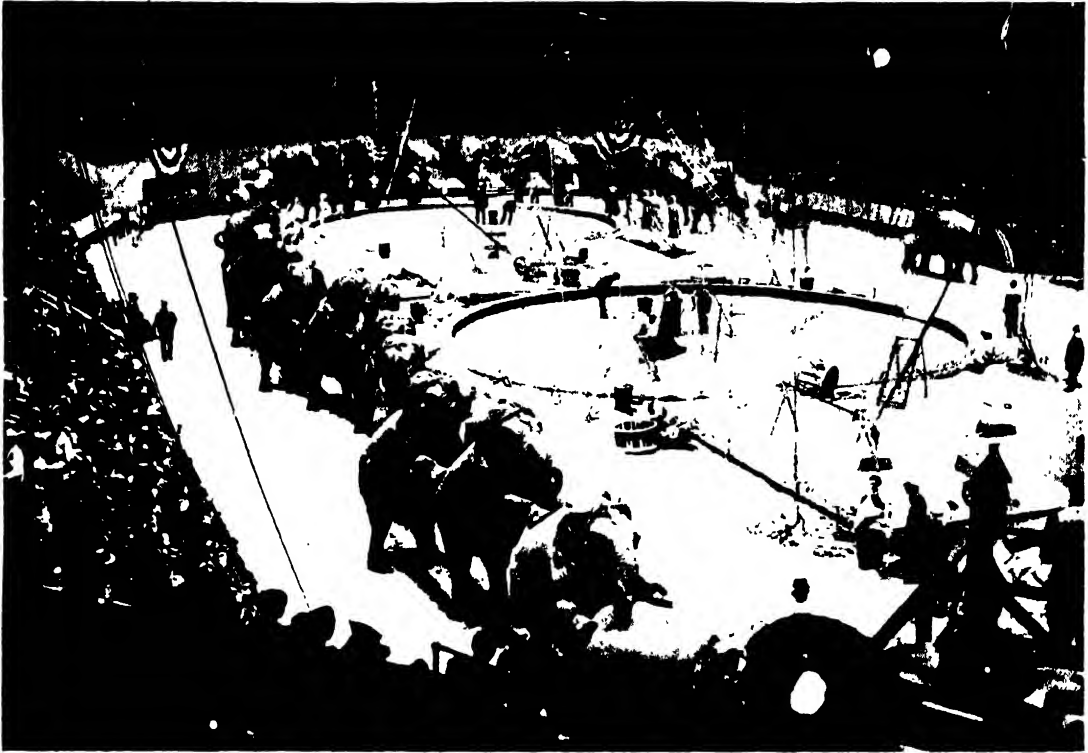
PERFORMING ELEPHANTS IN THE HUGE ARENA OF A RINGLING BROTHERS CIRCUS
New York Times

animals, and circus gear. A small tenting circus will probably only stay one or two days at each place, but the larger ones may remain anything from a week to a season.

In the early part of the 19th century travelling menageries and wild animal performances had become very popular, and were often combined with circuses. The most celebrated was the combined circus and menagerie owned by the Sangers. George and John Sanger were the sons of James Sanger who travelled a peep-show. As a young man George started a circus in partnership with his brother John. They had a pony which told fortunes, another trained horse and a few artists, and with these they opened a circus at the Charter Fair at King's Lynn. The show prospered so much that by the end of the 19th century Sangers' Circus was the most famous of all the English circuses. Elaborate dramatizations of wars and similar exciting events were still the most popular items in the English programmes. The horrors were made as realistic as possible: in *The Zulu War* captives

were burnt alive (in fact, they disappeared through an underground passage as the fire was being lit). The modern circus was also developing in other countries, for instance, in the Hippodrome of Paris, a large oval arena around which rapid riding and chariot races could take place.

The chief rival of the Sangers' was the American, Buffalo Bill, who brought his Wild West Show to London in the 1880's. As a member of the Nebraska legislature he was entitled to be called 'the Hon. William F. Cody'. Sanger, not to be outdone, called himself Lord George Sanger, and other showmen also adopted titles.

America is the home of the really big circus. Barnum and his partners, Coup and Costello, opened their first show at Brooklyn in 1871; they were the first to use the railway for moving their show. Barnum made a fortune by exhibiting Tom Thumb, the famous dwarf. The chief rivals of his circus were Cooper and Bailey, who were taking so much patronage from Barnum that in 1880 the two circuses came to an agreement and combined, becoming known as Barnum

and Bailey. A few years later Barnum and Bailey's was taken over by the Ringling Brothers, also celebrated circus proprietors, who in 1918 ran a combined show, with three rings, four stages, and about 800 performers.

In England at the beginning of the 20th century the circus had lost much of its popularity, being considered rather a childish entertainment. But in 1912 Charles B. Cochran revived its popularity by The Mammoth Fun Fair at Olympia—a combined circus, menagerie, and fair. In 1913 he hired Hagenbeck's menagerie, and had it so arranged that lions appeared to be roaming free on a mountain, and 500 Barbary apes running about a rocky hillside. In the circus itself there was an equestrian act employing 250 horses, another in which twenty polar bears performed tricks for a woman trainer, and a unique act performed by a horse, an elephant, two zebras, and a dog. These popular shows, however, ceased with the outbreak of war in 1914.

After 1918 the public interest in circuses was revived not only by the Sangers' and Hengler, but also by new circuses, the chief of which was Bertram Mills's Circus. This first appeared at Olympia in 1920 and afterwards every Christmas until the outbreak of the Second World War. After 1941, however, there were more circuses on the road than had been known before, and to-day the circus is more popular than ever.

A modern circus is very much larger and more elaborate than the earlier ones. At the Christmas circus at Olympia, for instance, there may be as many as 30 horses, a number of performing lions, dogs, monkeys, bears, and elephants, two or three troupes of trapeze artists, acrobats, jugglers, and possibly a dozen clowns. There are the animal trainers, grooms, mechanics, tent-men, electricians, drivers, catering staff, as well as the people dealing with the administration side of the business. Connected with the circus proper, there are side-shows, the menageries, and fun fair, all of which have to be run and staffed. For the smooth running of this great organization the man at the head has to be a business genius as well as a great showman.

See also ACROBATS; CLOWNS; JUGGLERS; PERFORMING ANIMALS.

CLARINET, *see* WOOD-WIND INSTRUMENTS.

CLAVICHORD, *see* KEYBOARD INSTRUMENTS.

CLAY PIGEON SHOOTING: Clay pigeons are used in shooting schools to teach beginners how to shoot game birds with shot guns. They are small saucer-shaped clay disks, about 4 inches in diameter, which shatter when struck by shot. They are thrown from traps operated by springs, so that their flight is similar to that of birds, varying in speed, direction, and height.

THE ANNUAL CHAMPIONSHIP OF THE CLAY PIGEON SHOOTING ASSOCIATION
The lever, shown in the foreground, sets the pigeons in flight. *Sport and General*

Besides being used for training, they are also used in shot-gun competitions. This sport is controlled in England by the Clay Pigeon Shooting Association, and local, national, and international competitions are arranged.

See GAME SHOOTING.

CLIMBING, *see* MOUNTAINEERING; MOUNTAINEERING, HISTORY OF.

CLOG DANCING, *see* FOLK DANCING, Section 5.

CLOWNS. We now use the word 'clown' in a rather special sense to mean the grotesquely clad, knockabout type of comedian found mainly at CIRCUSES, but once a feature of the

A HARLEQUINADE CLOWN
He is wearing the typical 16th-century Italian costume with painted face

HARLEQUINADE AND PANTOMIME and the MUSIC HALL (qq.v.). He often wears a gaily coloured costume of blouse and pantaloons, with a frill round the neck, and a pointed hat; and he has his face whitened, with a ridiculous expression painted in grease paint. Sometimes he wears a grotesque version of ordinary clothes, either too big or too small for him, and completed by a red wig and a false nose. Although he may speak at times, his humour is mainly conveyed in dumb show and consists largely of burlesque. The word 'clown' is derived from 'clod', for a rustic simpleton has always been a stock type of stage comedian. For hundreds of years, however, it has been used also in a fairly general sense: Shakespeare refers to his jesters as clowns, although they are anything but simple rustic types.

The ancestry of the circus and pantomime clown goes back a long way: there have been comedians both on and off the stage since the very earliest times. The ancient Romans had not only buffoons equivalent to the medieval JESTERS (q.v.), but also stage comedians, who appeared in their comic masques and mimes, and were very like our modern clowns. Among the strolling entertainers of the Middle Ages there were comedians of every kind, many of whom were also JUGGLERS and ACROBATS (qq.v.). Even when these wandering clowns became less numerous, they remained an important feature of the FAIRS (q.v.), and from thence were absorbed into the circus in the 18th century. The modern circus clown is still usually a competent juggler and acrobat, and thus well able to burlesque the performances of the serious artists.

In the religious dramas of the Middle Ages the devil was played as a comic character, becoming more and more of a buffoon as time went on. It is thought that the peculiar make-up of the modern clown owes something to the painted face of this comic devil. Our clown, however, owes most to the characters in the Harlequinade, the Italian popular comedy of the 16th century, in which the comic roles were usually played either by Punchinello (the ancestor of our Punch) or by Pedrolino, best known by his French name of Pierrot. These characters were dressed in clothes based on Italian peasant costumes of the day, consisting of a long blouse and pantaloons with a ruff round the neck, and sometimes also a pointed hat. Pierrot had his

· face whitened, probably simply to make him look more like an idiot.

In the late 18th century a character known as 'Clown' became the main figure in the Harlequinade. He wore a costume of Italian 16th-century style, with a grotesquely painted face, or sometimes he was dressed like Punchinello or Pierrot. His traditional equipment included a string of sausages and a red-hot poker, with which he chased the other characters. The greatest exponent of this part was Joseph GRIMALDI (q.v. Vol. V), the great clown of the late 18th and early 19th century. His influence upon future clowning was enormous—ever after his day 'Joey' became a nickname for all the clowns who wore this traditional costume. Grimaldi was a great pantomimist and tumbler, and had a peculiar gift for adapting objects and people to strange and grotesque purposes—he would, for instance, take one of the other characters by the legs and treat him as a wheelbarrow, and one of his favourite acts consisted of a 'one-man band' in which he played upon brooms and brushes as though they were musical instruments. It was his performance in Mother Goose especially which caused the Clown to become the most important character in Pantomime, and the Harlequin, and consequently the Harlequinade as a whole, to fade gradually into the background. Grimaldi used to perform in music hall, but he never became a circus clown, although the tradition which he began was carried on in the circus.

The circus clown, who wore a spangled costume, was somewhat different from the 'Joey', being descended from the old fair-ground entertainer, but after the time of Grimaldi the 'Joey' clown also became a feature of the circus. One of the most famous was 'Whimsical Walker', who wore an Italian-looking costume like that sometimes worn by Grimaldi, with the hair done in three points, and who used to chase the children with his red-hot poker. In the late 19th century a new type of clown appeared in the circus. He was called an 'auguste', and wore ill-fitting ordinary clothes—large baggy trousers, a coat much too long, big boots, and a large bulbous red nose. His evolution is said to be the result of an accident. At a circus performance · in Berlin, a ringmaster, named Tom Belling, tripped over one evening and fell sprawling in the ring. The German crowd roared with derision and shouted out 'auguste idiot'

('auguste' being an old German expression for a fool). The next evening Tom Belling put on a pair of baggy trousers, painted his nose red, and deliberately tripped and fell, much to the crowd's delight. From that developed this very popular circus character the auguste. Grock, one of the most famous clowns of circus and music hall, was an auguste, and Charlie CHAPLIN (q.v. Vol. V) took this type of character to the films. Clowning in circus style was particularly suitable to the silent film, and Chaplin excelled at the expressive gesture, creating a character who, though as comic as any clown could be, was also very real and pathetic. Pimpo, of Bertram Mills', was an auguste who became so popular that when he left the circus his name was handed on to his successor.

The circus clown may fulfil many different

The central figure is Coco, of Bertram Mills, a famous clown of the auguste type. *Sport and General*

functions. The 'Entry' clowns are among the most important artists in the circus, and have a special act to themselves. The chief Entry clown is usually a splendid figure, wearing a very elaborate costume: a famous French clown named Theodore used to wear tunic breeches of three different colours, covered in spangles, the tunic painted with luminous paint. The 'fill-in' clowns are less important, their function being to keep the audience amused while the ring is prepared for the next act. They will often fool about with the apparatus and probably burlesque the act which has gone before. Sometimes they come out into the audience. At Bertram Mills' there is a procession of fill-in clowns round the ring, all wearing grotesque costumes, and accompanied by midgets and stilt-walkers. The auguste may have an act of his own, but generally he is the dupe of the cleverer clowns, having all kinds of tricks played on him. The modern auguste often uses various mechanical gadgets, of the type to make him emit sparks or explode when he is hit by the other clowns. Although clowns sometimes speak, and at one time used to recite verses and sing songs, clowning in its truest sense is the art of dumb-show: in the modern circus, where the ring is very big, the clown is usually silent because he would not, in any case, be able to make himself heard.

The conventional clown has nearly disappeared from the ordinary stage. The comedian of the music hall is a very different character, not at all in the Grimaldi tradition.

There is still old style clowning in Pantomime, but the clowns are no longer simply clowns—they play definite parts, such as the Dame, Simple Simon, and the Robbers in the *Babes in the Wood*—to say nothing of the front and back legs of the Pantomime horse.

See also CIRCUSES; FAIRS; HARLEQUINADE AND PANTOMIME; JESTERS; MUSIC HALL.

CLUBS, *see* PONY CLUBS; RAILWAY SPOTTERS' CLUBS.

CLUBS, BOYS' AND GIRLS'. One of the most striking differences between life for boys and girls a hundred years ago and today, is in the enormously widened opportunities for the enjoyment of leisure. Formerly, our overcrowded cities provided little chance of recreation or cheap entertainment. There were no playing fields and few public parks, so that young people from poor homes had nowhere to go and nothing to do in their free time. The first attempts to cater for their needs were made by religious bodies such as the Sunday School movement and by such philanthropists as Lord Shaftesbury and John Pounds, who started a club for cripples. In 1844 the Y.M.C.A. was founded, and 1851 saw the beginnings of the Y.W.C.A. (qq.v.) In 1861 a girls' club with some of the amenities of a modern club—reading-room, lending library, and recreation room with piano—was started in Bristol, and gradually similar small clubs for boys or girls with an adult leader developed in most large towns. These early clubs were established to keep young people off the streets: the members were usually given religious instruction and sometimes they were also taught reading, writing, and crafts such as sewing or bootmaking. The next development was the formation of some of the well-known uniformed organizations: the Boys' Brigade (1883); the Church Lads' Brigade (1891); the Girls' Life Brigade (1901); Boy Scouts (1907); and Girl Guides (1909) (qq.v.).

As more clubs were founded, they formed themselves into local and then into national associations. As early as 1880 a 'Girls' Club Union' brought together clubs from all parts of the country, and in 1911 the National Association of Girls' Clubs was founded. The National Association of Boys' Clubs was formed in 1925. These national associations offered affiliated clubs help of various kinds, such as training schemes for club leaders, advice on club programmes, provision of literature and maintenance of holiday centres for the use of club members. Gradually new organizations arose, some belonging to large religious organizations such as the Girls' Friendly Society or the Student Christian Movement, others attached to local churches or chapels. Then specialist bodies such as the Red Cross Society and the St. John Ambulance Brigade began to form Junior Detachments to encourage their members to give voluntary service to the community and to train them in first aid. Then people with a common hobby began to form Cyclists' Touring Clubs (*see* CYCLING) or the RAILWAY SPOTTERS' CLUBS (q.v.), and others. The National Federation of YOUNG FARMERS' CLUBS (q.v. Vol. VI), the YOUTH HOSTELS ASSOCIATION (q.v.), the Camping Club of Great Britain (*see* CAMPING),

and many other organizations began to cater for special interests. Some Clubs, such as the International Voluntary Service for Peace, try to promote international understanding, their members giving practical help in their own and other countries in work of public utility or of reconstruction after natural catastrophes. During the First World War, when the need for co-ordination became obvious, the Juvenile Organizations Committee was established, representing the various voluntary organizations which ran youth clubs. During the Second World War the State entered into partnership with the voluntary organizations and official help was available on a wide scale. Under the Service of Youth scheme, Local Education Authorities were empowered to help existing clubs and to foster the development of new clubs by making financial grants, providing premises, and giving other kinds of help.

Besides the many clubs for boys or girls, there are to-day over a thousand mixed Youth Centres with a membership of about 150,000. These clubs for young people between 14 and 21 vary greatly in size: there are large clubs with several hundred members meeting every night of the week: there are small clubs with a handful of members meeting perhaps once or twice a week in isolated villages. Some clubs have their own premises: others meet in schools, village halls, converted cottages, factories—one has met in a disused workhouse. A recent development is the mobile club; a number of converted mobile canteens visit places in rural areas and isolated spots such as the Isle of Mull. Some clubs have a full-time trained leader; others rely on the voluntary services of part-time enthusiasts. But any good club is largely run by its own members, who form a committee to co-operate with the leader, and who take turns in helping with the 'chores' such as washing up in the canteen or doing minor repairs to premises or furniture.

Club members pay a small but regular sub-

A SCENE IN THE COMMON ROOM OF A GIRLS' CLUB
National Association of Girls' and Mixed Clubs

scription and have a say in deciding the pro-
gramme of activities. Clubs encourage all
kinds of physical activity—athletics, boxing,
football, cricket, swimming, physical training,
cycling, and camping; and competitions and
matches with other clubs are arranged. In the
summer club camps and club holidays take
place, and a number of clubs have visited
foreign countries. Clubs produce their own
plays and concerts; some have their own
magazine or wall newspaper: they organize
socials and dances, run discussion groups and
club parliaments; they form groups for painting
and-sketching, woodwork, model making, dress-
making, cookery, and handicrafts of many kinds.
The keynote of every club is friendship and the
sharing of responsibility: a club is a cheerful
place in which to meet friends, listen to the
radio, play a game of table tennis, or enjoy a
snack in the canteen. A successful club offers its
members opportunities to get the maximum
enjoyment from life by developing their own
interests and by becoming good citizens.

CLUBS, HISTORY OF. Clubs, as we know
them, date approximately from the reign of
Charles II. The earliest were purely social and
convivial gatherings of men. A 'club' meant at
first a supper or a party of which the expenses
were paid by all present in equal shares. It
might be held at a private house or a tavern.
PEPYS (q.v. Vol. V) mentions clubs of this kind
in his diary, recalling how he and his friends as
young men used to 'keep our weekly clubs'.
Soon the word came to imply, not one meeting
only, but a regular meeting of a regular body
of people. Dr. JOHNSON, Sir Joshua REYNOLDS,
(qq.v. Vol. V) and their circle used to meet at
what they called simply 'the club', founded in
1763, where they dined and talked about litera-
ture and on life in general. This club had no
building or rooms of its own, and functioned
only on club nights. Since then there have been
many clubs on this basis, including all dining
and luncheon clubs meeting in hotels and
restaurants, darts clubs at public-houses, and
old boys' clubs (apart from their sporting
activities). Masonic lodges (*see* FREEMASONRY,
Vol. X.) and ROTARY CLUBS (q.v. Vol. X) are
to some extent similar, although they have other
purposes as well.

Another type of club had its origin in the
17th-century London coffee-houses, the first of
which was opened in 1652. These became places
where gentlemen about the town would go
regularly to hear the latest news and gossip and
meet their friends and acquaintances. Here a
man could become known in the fashionable
and literary worlds, and mix with the great and
the successful, if they would accept him into the
favoured inner circle which grew up in most
coffee-houses. At Arthur's, DRYDEN (q.v. Vol.
V) could be found with a circle of literary men.
At White's Chocolate House, founded in 1693,
the regulars had formed themselves, by 1736,
into a formal club, with rules and a definite
membership, restricted to approved persons.
Later, another and less exclusive club was
formed. Up to 1755 the public, as well as
members, were still admitted to the coffee-house
of either club; but after this, non-members were
not admitted. In course of time the two clubs,
Arthur's and White's Chocolate House, were
amalgamated, with the former coffee-house as
the club premises. During the 18th century
several other clubs were formed in a similar way.
The premises at first remained the property of
the proprietor, but were open only to members,
who could go there at any time for refreshments,
talk, and amusement. Cards were a favourite
form of recreation, the members playing for
money and generally for high stakes. Bets, and
often high bets, were made on anything that
members thought of—for instance, 'that
Napoleon would be beaten within six months'—
and were recorded in the 'betting book' of the
club for reference when the time came for pay-
ment. After a time some clubs came to own
their own premises and were no longer depen-
dent on the proprietor. White's, Brook's, and
Boodle's Clubs (all named after the original pro-
prietors) are three which became permanent
and still exist in the St. James's Street and Pall
Mall area of London, where many other 'West-
End' clubs are now to be found.

New London clubs were started to cater for
people with special interests: among them were
the Guards' (1813) and the United Services
(1815) for officers, the Carlton (1832) for Con-
servatives, and the Reform (1834) for their
opponents. In 1824 the Athenaeum was founded
for literary men and artists—literary men being
taken to include such men as bishops and
judges. Sir Walter SCOTT (q.v. Vol. V) and
John Murray the publisher, were among its
first members. Since 1831 the Athenaeum has

THE CLUB HOUSES IN PALL MALL. Coloured lithograph by T. Shotter Boys, 1842
On the right in the first block is the Carlton Club. In the next block is the Reform Club, and beyond that is the Travellers' Club, the Athenæum, and the United Services Club

had its own building in Pall Mall. About this time, too, a new importance began to be attached to the premises of a club. A newspaper in 1835 compared White's unfavourably with the newer clubs, the United Services, the Travellers', and even the Athenaeum, because its meals were not so good, and it had no hot baths and dressing-rooms. The 18th-century club provided mainly social pleasures and gaming: the Victorian and modern club with its own premises, especially in London and other big towns, has come to be valued for its convenience as a comfortable building, more private than a restaurant and more central than one's home, always open and providing meals and drinks, a lounge, a good number of newspapers and periodicals, and in many cases a bedroom and bath when required. Congenial society is valued as an additional attraction, a reason for choosing one club rather than another. The West End clubs, however, are both expensive and exclusive, and for those who do not want or cannot afford to join one, there are others in

other parts of central London less expensive and easier to join. There are also clubs in many cities and towns—some of them old, especially in such cities as Edinburgh and Dublin where there was an aristocratic society in the 18th century. The admission of women into club life dates from the later 19th and early 20th centuries. Now there are many clubs for women only, and some for mixed sexes.

Sporting Clubs started in the 18th century. The early cricket clubs, like the town clubs of the time, were organized by and for 'gentlemen', the paid 'players' not being members. In the 19th century there was a movement in favour of social clubs for working men, as places for refreshment and recreation, as alternatives to the public-houses. At first these were organized by philanthropists; but a sturdy independence soon developed among the members, and in 1862 the Working Men's Club and Institute Union was founded. These clubs are now entirely self-supporting; they usually have a bar, sometimes a billiards-table and a hall for
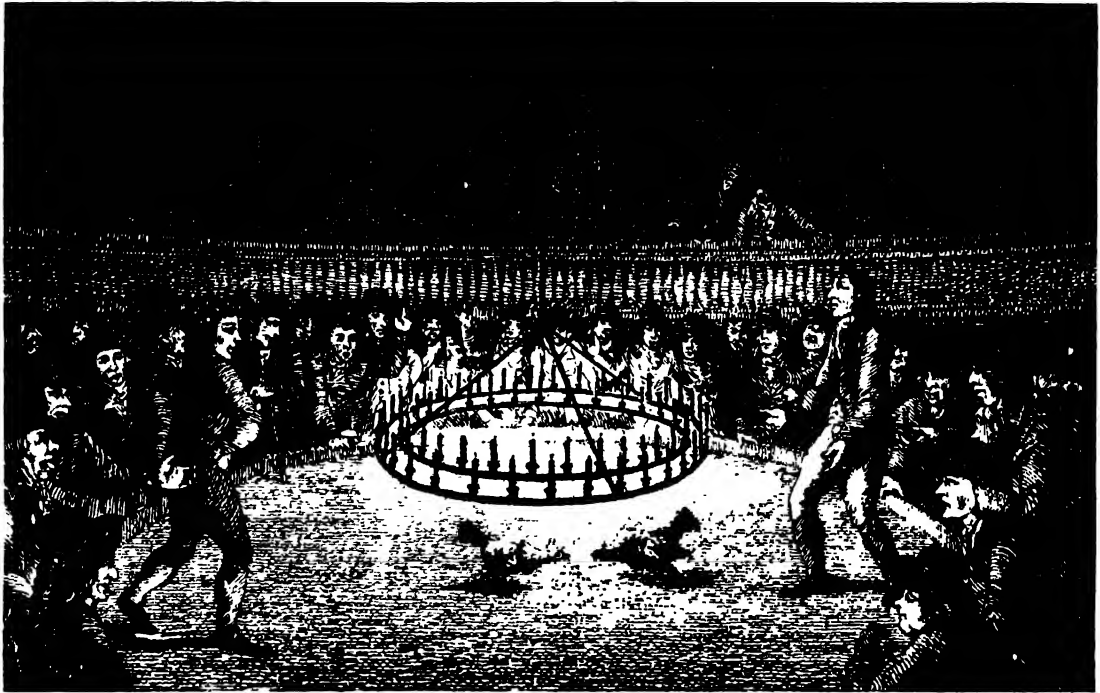
COCK-FIGHTING IN THE 18TH CENTURY
An engraving of the Cockpit Royal, from the *Sporting Magazine*, 1796

concerts and dances. In them can be seen the forerunners of many social clubs of more modern origin, such as the Clubs for the Un-employed which developed during the economic depression of the 1930's, and the Citizens' Clubs which have grown out of clubs for war-workers, started at the instigation of the Ministry of Labour, during the Second World War, to provide recreational facilities for war-workers transferred from home.

At the same time clubs for boys and girls and young people between 14 and 21 began to grow up (*see* CLUBS, BOYS' AND GIRLS'). The National Association of Boys' Clubs and the National Association of Girls' Clubs have now affiliated clubs which were started all over the country through local effort.

COCK-FIGHTING, or 'cocking', is a very old sport, though nowadays it is illegal almost everywhere except in Spain, the Far East, and some of the Latin-American countries. It prob-ably began in India, Persia, or China, spreading from there to Greece and the Mediterranean. It was very popular in ancient Greece and Rome,

and the Romans are said to have introduced it into England. Henry II and Henry VIII (who built a Royal cockpit at Whitehall) favoured cock-fighting; so did the Stuarts—and the sport came to be known as the 'royal diversion'. Cromwell forbade it as meetings provided a cover for Royalist gatherings; but from the Restoration until Victoria's reign, it advanced in technique and popularity. In the 18th cen-tury the early rules of prize-fighting were modelled on those of cock-fighting. The sport was prohibited by law in Great Britain in 1849, although its supporters maintain that it is no more cruel than fox-hunting or fishing.

The game-cock is a fiercer version of the domestic fowl, probably descended from wild cocks. Breeding cocks was as skilled and im-portant a part of cock-fighting as breeding horses is of racing. In England successful fighting cocks were intensively inbred, whereas in America crossing of various breeds was pre-ferred. Between 1800 and 1849 important breeders in England kept anything up to 3,000 cocks each. Feeding and training the cocks, and bringing them to the top of their form on

the day of the fight, was as skilled a job as breeding them. To fight, the cocks had their combs and wattles cut, or 'dubbed', to give their adversary nothing to grip; the feathers, wings, and tail were also trimmed or 'cut out', in such a way as to render the cock more mobile, less vulnerable, and more dangerous to its opponent; and the natural spurs of the cock were cut short, artificial spurs, or 'heels' being fitted on instead. These spurs, made usually of silver or steel, sometimes had blades as well as points, and might be anything from $1\frac{1}{4}$ to $3\frac{1}{2}$ inches in length. Heels were used so that the cocks should have spurs of equal length; they were more dangerous, but inflicted cleaner wounds than the natural spur, which seems to carry some poison. Artificial spurs were used by the Romans and in the Middle Ages: indeed, Cockspur Street in London was so called because the spurs were made there. Fighting-cocks had to be of equal weight to within one ounce. In fighting they used beaks and wings as well as spurs.

The cockpit was usually circular and about 16–20 feet in diameter. It sometimes had six or eight corners, and always had a padded barrier about 2 feet high encircling it. The cocks were held by 'setters-on', who placed them face to face and allowed them to peck each other in the centre of the pit. The setters-on, having set the cocks on their feet, retired to their corners, and were not allowed to handle their cocks during the fight unless their spurs caught or a bird refused to fight. In the latter case the cocks were set breast to breast in the middle of the pit until one or both were counted out. The fight continued until one cock was killed or refused to continue fighting. The setters-on acted very much as seconds do in boxing, and could do much to influence the result of the fight by their skill in handling their birds. A referee was present in case of dispute; but, in fact, there was probably less dispute about rules and decisions in cock-fighting than in most sports.

Usually, single fights formed part of a 'main', an agreed odd number of fights between pairs of cocks belonging to two owners. The cock winning the majority of victories won the main. In the 19th century as much as 12,000 guineas might form the stakes for a single seven-fight main, quite apart from any betting on the result. Other, though less common, forms of cock-fighting were the 'battle-royal', a free-for-all

fight between any number of birds set in the pit at the same time, the survivor being the winner; and the 'Welsh main', a knock-out competition for eight or sixteen cocks. Cocks often fought only once, since they were frequently severely wounded or killed—and it was felt better to retire survivors after one fight. Some famous cocks, however, did win as many as thirty fights, but this was most unusual: few fought more than half-a-dozen times. As a result, breeds rather than individual cocks became famous.

Before the large-scale development of horse-racing, boxing, and football pools, cock-fighting provided the commonest means of gambling; and in its heyday, from 1750 to 1849, when mains were often combined with race meetings, betting was one of the chief reasons for its popularity. Since it was declared illegal, cock-fighting has almost died out; though it probably persists in some measure in England and America even to-day.

COIN COLLECTING. Coins from quite early times exist in such large numbers that a beginner can easily form an interesting general collection at very moderate cost. It is possible, for example, to acquire a coin of the time of Alexander the Great or of Queen Elizabeth for a shilling or two. Coin collecting promotes an interest in history: most collectors soon find that one period rather than another attracts them, and they begin to specialize in the knowledge and acquiring of coins of that period. Suitable series for the young collector are English silver and copper coins or Roman silver and brass coins. He should go round the small antique shops, which usually have a few odd cheap coins, always being careful to buy only legible specimens. Once his interest is really aroused, he can go to the great coin-dealers, who will encourage him by letting him have coins suitable to his purse. He should get in touch with other young collectors to exchange duplicates. When a coin is acquired, the collector should find out all he can about it: when in difficulty he should consult an older collector, the local library or museum, or the British Museum. The natural arrangement of a collection is: Country, Ruler, Denomination, and Date. A simple way of keeping coins is in small envelopes, on which full particulars should be written. These can then be arranged in suitable boxes. A manu-

1. Tetradrachm of Alexander the Great (*c.* 336–323 B.C.). 2. Denarius of the Roman Emperor Augustus (31 B.C.– A.D. 14). 3. Bronze coin of Constantine the Great (4th century A.D.). 4. Sixpence of Queen Elizabeth (16th century). *Brit. Mus.*

script catalogue of the whole collection should also be made and kept to date. The *British Museum Guide to the Department of Coins* is a useful source of information on the subject.

See also Vol. VII: Coins, History of.

COLLECTING, *see* Autograph Collecting; Book Collecting; Butterfly and Moth Collecting; Coin Collecting; Flower Collecting; Stamp Collecting.

COMEDIANS, *see* Clowns; Jesters; Music Hall.

COMIC SPORTS. Just as all the turns at the Circus (q.v.) are parodied by the clowns, nearly all sports have their variations, and as a rule these are funnier for the spectators than for the competitors. It is difficult to say when most of these comic sports began. Tilting the Bucket is based obviously enough on jousting with lances (*see* Tournaments). A bucket of water is fixed to a board with a hole in it. Armed with a pole, the competitor sits on another's shoulders and as he is carried underneath the board, he tries to push the pole through the hole. If he misses, he brings the water down on his head. The Pillow Fight, where the contestants balance astride a pole and fight with pillows, has perhaps the same origin. The Obstacle Race has no rules to limit the invention of obstacles, and it often includes quite a number of novelty events. Between the starting-line and the finishing-tape, competitors may have to crawl under a net or sheet pegged to the ground, struggle through motor tyres swinging at shoulder level, eat a bun, drink a glass of water through a straw, climb up a slippery pole, thread a needle, change their clothes, eat an apple bobbing in a bucket of water without using their hands, and finish by threading their way through a criss-cross of knee-high strings.

At all children's sports there are three very popular comic races: the Three-Legged Race is run by partners with the right ankle of one tied to the left of the other; in the Sack Race the runners' legs are in a sack which is tied under the arms; in the Egg-and-Spoon Race the runner has to carry an egg—preferably a china one—in the spoon along the course without touching it with his hand. In the Balloon Race, the balloon is knocked forward along the course with the head, a hand, or a stick; it must not touch the ground, or be caught or carried. In the Slow Bicycle Race the winner is the one who, without falling off his bicycle, manages to come in last. Blindfold Boxing, naturally confined to boys, can afford much amusement.

Most of these events, with a little modification, are successful as water sports. A form of jousting can be played in rowing-boats, the lance in this case being a mop, and the jousters standing upright in their boats. For the sake of the loser this game should take place in shallow water.

See also Party Games.

CONCERTINA, *see* Reed Organs.

CONCERTS. The original meaning of the word concert was 'a performing together', and for a long time it was used only in this sense. Now, however, the word means also a musical event: we talk of a 'Symphony concert', 'a

Mozart concert', 'a concert of light music', or 'a concert of chamber music'. It is also applied to a programme of solo performances by a number·of musicians, and is thus different from a 'recital', which means a performance by a single instrumental player or singer.

Except for STREET ENTERTAINERS (q.v.), musical performances were for a long time only given at courts and in the private houses of the upper and middle classes; and it was not until 1672 that the first public concerts took place in England, when John Bannister, a violinist, collected a small body of musicians and gave daily concerts in his house in Whitefriars in London, which the public could attend for a shilling. The audience sat at small tables as if they were in an ale-house, and the musicians played in a large raised box which was curtained off from the audience because of the modesty of the players. The music was varied and of good quality—Bannister himself performed wonders upon a flageolet—and the audience could call for what they wished to hear. These concerts ran for 6 years, and were succeeded by another series run by a man called Thomas Britton. Britton was a picturesque character, by trade a hawker of charcoal, who had taught himself to understand and love music. He converted the loft over his coal house in Clerkenwell into a music room, with a harpsichord and a small organ with five stops on which Handel himself sometimes played. At the beginning admission to Britton's concerts was free, but later he charged an annual subscription of 10 shillings. After Britton's death musical concerts were held in Hickford's Room in Piccadilly, where many foreign singers and musicians, who were visiting London, gave performances. By the end of the 18th century public concerts had become very fashionable both in England and on the Continent, and several series of concerts were organized from time to time, drawing large audiences and doing much to bring classical music before the public. The Professional Concerts, for example, which ran from 1783 to 1793, introduced many of Mozart's and Haydn's works. In 1813 the Philharmonic Society, now the Royal Philharmonic Society, was formed for the encouragement of instrumental playing in particular. In 1855 another famous series of concerts began in the Crystal Palace under the conductor August Mann Traditions of concert-going grew up in other cities of Britain: for

example, in Manchester, where subscription concerts were held from 1744 and where Charles Hallé founded in 1857 the Hallé Concerts, still famous to-day. In Edinburgh concerts took place from 1762 onwards. Oxford, also, has always been a great musical centre: Handel and Haydn both gave concerts there, and the music-room in Holywell is the oldest existing music-room in Europe. One of the most interesting types of early concert-going both in England and on the Continent were the 'Garden' concerts, which attracted large audiences. The most famous of these gardens were Vauxhall, Ranelagh, and Marylebone. Concerts are rarely given out-of-doors to-day except for concerts by BRASS BANDS and MILITARY BANDS (qq.v.), who play from park bandstands and at seaside resorts during the summer.

The development of public concerts in Europe and in the United States can only be summarized. In general, large concert organizations, such as the Gewandhaus Concerts of Leipzig, grew out of private music clubs or societies. In Italy private musical gatherings were very

AN 18TH-CENTURY CONCERT
A drawing by Marcellus Laroon (1679–1772) of a concert at Montagu House. *Brit. Mus.*

common throughout the 18th century. In France public concerts really began with the Concert Spirituel in 1725, which was copied in many parts of Europe. In the United States concert-going also began in the 18th century, the earliest concerts in the American Colonies being generally followed by a ball. It is interesting to note that in Austria the society known as the Gesellschaft der Musikfreunde (a Company of Friends of Music) was formed in 1813, the same year as the birth of the London Philharmonic Society.

Concerts to-day are many and varied: they include full scale Symphony concerts, Chamber Music concerts, Brass and Military Band concerts, and concerts by amateur members of local musical societies. Regular series of concerts are given during the year by well-known orchestras. The Hallé Orchestra, for example, gives concerts every fortnight in Manchester throughout the winter. The Promenade concerts are probably the most famous of all these series. They were first held in 1895 in the Queen's Hall, and were directed by Sir Henry

Wood; and they still continue to-day in the Royal Albert Hall. They take place every night for about 3 months in the summer, and the programmes include new and contemporary works, as well as classics. Usually there is a short winter season lasting for about a fortnight. The great feature of these concerts is that the audience may either listen to them from a seat or from the 'promenade', where they can stand or stroll about, or, if there is room, sit down on the floor. There is, therefore, an informal atmosphere about them. Promenade concerts are also popular on the Continent. As well as these series of concerts, orchestras tour the country giving concerts in many towns. Many public concerts are relayed over the wireless and, every week, there are a number of concerts played in the studios of the B.B.C. by B.B.C. and other orchestras (*see* BROADCASTING PROGRAMMES). Finally, many towns have their own municipal orchestra, which gives regular concerts in which well-known visiting soloists often take part. It is interesting to note that our expression 'to be keyed up to concert pitch'
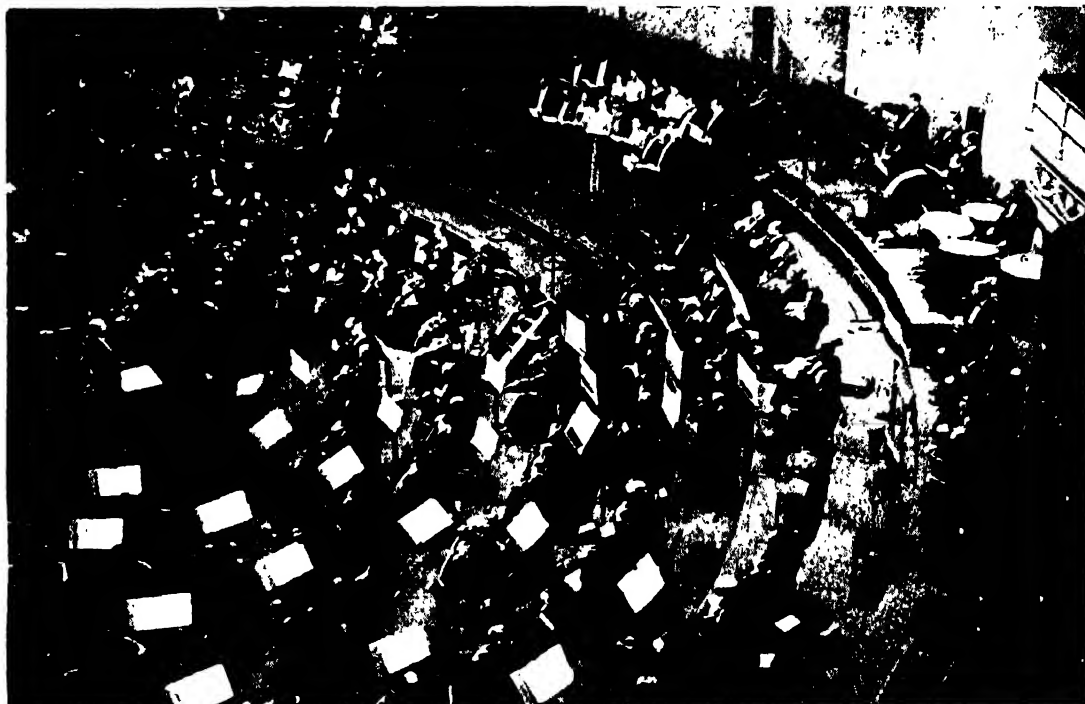
A PROMENADE CONCERT IN THE ALBERT HALL
The B.B.C. Singers and the B.B.C. Symphony Orchestra conducted by Sir Adrian Boult. *B.B.C.*

comes from the tense and exciting atmosphere of a good and thoroughly rehearsed concert.

The actual concert hall in which music is played has a great effect upon the reception of the music by the audience. In most concert halls it is easier to hear properly from certain parts than from others. If the ceiling is too high, for example, it is likely that echoes will occur, unless the architect has counteracted them by covering the ceiling with some absorbent material. In the past the choice of a good concert hall has been largely a matter of luck, but to-day problems of Acoustics (q.v. Vol. VIII) are taken more and more into account during the planning of new concert halls.

See also Choirs; Conducting.

CONDUCTING. With almost every large group of instrumentalists and singers, there is a conductor who directs the performance. Very small groups, such as quartets or trios, do not require so much the guidance of a conductor. The conductor of an orchestra usually stands on a rostrum facing his players, where he can see and be seen by them all. In Opera or Ballet (qq.v.), he takes up his position in the centre of the orchestra pit, from where he controls both the orchestra and the players on the stage.

A conductor should have wide musical experience and knowledge. He should understand the technique of the instrumentalists and singers whom he directs; he should have a full knowledge of the works which are being played; and he should know how to use the baton for 'time-beating' and for obtaining the required effects from the orchestra. The diagram shows the movements of the baton when time-beating—that is, marking out the pulses by set movements. The conductor dealing with familiar works played by an orchestra which is known to him, may possibly dispense with this formal time-beating and achieve his control by free gestures: but these alone are dangerous on unfamiliar ground, and the time-beating method is generally used so that the instrumentalists may know at any time which point of the music has been reached. To interpret music, however, a conductor must

DR. SERGE KOUSSEVITZSKY CONDUCTING THE BOSTON SYMPHONY ORCHESTRA. *Paul Popper*

do far more than beat the time. It is his task to draw out particular qualities of the music he is conducting and to obtain the effects which the composer wished to be heard. He should be faithful to the composer's intention, and not distort the shape of the music. The standard of playing of an orchestra depends primarily on the ability of the players; but a conductor can encourage them to give of their best and can impart energy, enthusiasm, and care to the whole performance. Experiments have, in fact, been made in dispensing with the services of a conductor, but nearly always his absence lessens the quality of performance.

A 15th-century drawing shows a group of singers and instrumentalists directed by a conductor who controls his players with a roll of paper held in the right hand. Most conductors of the 16th, 17th, and 18th centuries directed group performances while seated at the harpsichord. A picture of the organ-loft in St. Thomas's Church, Leipzig, in 1710, shows the conductor with a roll of paper leading a small orchestra consisting of strings, lute, horn, trumpet, kettle-

THE MOVEMENTS OF A CONDUCTOR'S BATON

drum, organ, and a small collection of singers. Sometimes the roll of paper was used to beat out the time on a desk, sometimes the conductor thumped the floor with a long baton. In 1687 the composer Lully struck his foot with such a baton and developed an abscess from which he died. Sometimes in place of the harpsichord-conductor, the principal string player, now called the leader of the ORCHESTRA (q.v.), directed the performance, part of the time using his bow as a baton and at times joining in with the orchestra, in much the same way as the leader of a small café orchestra does to-day. In the 18th century the composer and conductor Stamitz (1717–57) did much to improve the standard of orchestral playing and to improve the technique of conducting.

The first performance in London of a work directed by a conductor completely free from playing responsibilities was probably the occasion when Spohr directed a performance of the London Philharmonic Society in 1820. The earlier practices, however, persisted for some time, and in 1829 Mendelssohn conducted Beethoven's 5th Symphony seated at the piano-forte. Later von Bulow (1830–94), by demonstrating the importance of the non-playing conductor and improving the technique of handling the baton, established the position of the conductor as we know him to-day.

CONJURING. The conjurer practises a form of deception by which he seems to have magical powers—powers, for example, of being able to read the minds of his audience, or cause objects to vanish and reappear. He uses various forms of trickery—'sleight of hand', specially prepared trick objects, or secret signs between himself and a confederate. The art of conjuring was known to the ancient Egyptians, Greeks, and Romans, and has flourished in the East for thousands of years. Its history goes back to the time when the belief in MAGIC (q.v. Vol. I) was universal, and could well be exploited by skilful trickery. Conjurers, like ACROBATS and JUGGLERS, were common amongst the medieval STREET ENTERTAINERS (qq.v.), performing at the FAIRS and ultimately finding their way into the theatre by way of the MUSIC HALL (qq.v.) where they were very popular in the 19th century.

Sleight of hand, or 'legerdemain', is the basis of most conjuring tricks, and the conjurer who practises it is known as a 'prestidigitator', from the Latin *praesto* (ready) and *digitus* (finger). He generally performs with small flat objects such as coins, seeming to conjure them from the air, to pluck them from behind ears, or shower them from the noses of his audience. He is an expert at 'palming' (concealing a small object in the hand) and at 'back-palming', by means of which both the back and front of the hand can be shown as empty, a coin being pivoted back and forth between the fingers as the hand is turned. A traditional phrase in conjuring is 'the quickness of the hand deceives the eye', but the prestidigitator often achieves most by distracting the audience at the crucial moment so that he has time for his movements. He does this by means of 'patter' and exclamations such as 'Hey Presto!', by looking away from his own hands so that the audience follow his gaze, and by special flourishes with the various objects he uses. When using cards, for instance, he 'riffles' them (bends and releases them so that they make a snapping noise), 'springs' them (makes them jump one by one from one hand to the other), and drops them so that they fall in one continuous line.

Sleight-of-hand tricks are extremely ancient, having been used since the earliest times by cheats and card-sharpers as well as by entertainers. The old cheating trick known as 'thimblerigging', in which the performer pretends to hide a pea under one of four cups or thimbles, but really palms it, is depicted on the fresco of an ancient Egyptian tomb. The card-sharper uses most of the same devices as the conjurer—marking and bending the cards, palming them, and making false shuffles.

One of the greatest prestidigitators was Giovanni, a Hungarian who became famous in the 1930's for his ability to pick pockets, remove watches, wallets, and even waistcoats and braces from members of his audience without their being aware of it. The most dexterous and puzzling performer of all was Houdini, early in this century, who practised an art known as 'escapology', being able to break from handcuffs and any kind of bonds or imprisonment, getting free even when he was roped in a weighted sack and dropped through the ice of a river.

The majority of conjuring tricks are illusions performed with mechanical aids. Many still-familiar illustrations are extremely ancient, and, though we cannot know how they were once

A CONJURER
From a 19th-century woodcut

done, we know that they are now achieved by mechanical means. One of the oldest of these is fire-eating, now generally performed in India as elsewhere, by means of a specially-prepared piece of string loosely wrapped in hemp, which is put into the mouth glowing, and bursts into flames only when a draught of air is expelled through the mouth. The conjuring up of 'visions' is another ancient Eastern illusion, believed to have been known also in the Middle Ages. It is performed by throwing images on smoke, with the aid of a concave metal mirror. Another illusion, traditional in India, is the 'boy and basket' trick. In this a boy steps into a basket, and the conjurer continually plunges a long knife through the lid to the accompaniment of screams from the boy and an issue of blood. In the most usual version the boy steps out unhurt, the basket being so constructed that he can dispose his body round the sides, avoiding the thrusts of the knife, and the blood, of course,

he squeezes from a sponge. In other versions he seems to have 'disappeared'; in fact he has retired into a cavity underneath what is apparently the bottom of the basket, and another small boy dressed similarly appears at the back of the crowd.

Still unsolved is the world's most famous illusion—the Indian Rope Trick. In this, it is said, the conjurer sits cross-legged on the ground and throws one end of a coil of rope into the air. About 20 feet of the rope stiffens and stands up like a pole. A small boy then climbs the rope, balances on the end, and, at a signal from the conjurer, vanishes into the air. He is later discovered in a basket, or comes running into the crowd from a distant spot. At another signal the rope crumples to the ground. Special journeys have been made to India to investigate the illusion; but the investigators have not only never succeeded in seeing the trick, but have also never met anyone else who has. There are

people who claim to have seen it, but their claims can never be substantiated, and though enormous rewards have been offered for its secret, it remains a mystery. There have been several attempts by Western conjurers to imitate the trick, but though some of the performances have been convincing, they have never been exactly the same as the original version: the rope, in fact, has to be supported by wires, and is therefore generally shown already erect at the start. Amongst the various explanations of the illusion are the theories that it is a kind of optical illusion able to be produced only in India's special atmospheric conditions; that the conjurer merely hypnotizes the crowd into the belief that they are seeing it; or, of course, that it is all nothing more than a legend and has never really been performed at all.

Some of the illusions performed on the modern stage are hardly less amazing to see, although easily explained. Use is made of all kinds of devices and scientific aids. In 1842 electricity was used in conjuring for the first time by a conjurer who 'lit' two hundred candles at the single shot of a pistol; and the famous French conjurer of the 19th century, J. E. Robert-Houdin, performed baffling tricks by means of electromagnetism. He opened a 'Temple of Magic' at Paris, and produced many elaborate illusions, one of the best known being his 'Orange Tree', on which the oranges suddenly appeared at a signal, the conjurer extracting from the topmost orange a handkerchief borrowed from a member of the audience. Robert-Houdin also performed 'levitation'—by means of a concealed rod he caused objects and even people to rise up and remain suspended off the ground. The most famous of all modern conjurers was Sir John Nevil Maskelyne, who appeared first at St. James's Hall, Piccadilly, in 1873, and became enormously successful. He and his partner, David Devant, later took over St. George's Hall, which became a centre of magic until well into the 20th century. Maskelyne took advantage of the fact that SPIRITUALISM (q.v. Vol. 1) was very much in vogue just then to announce that he could duplicate all the spiritualist's alleged supernatural manifestations. He was so successful, it is said, that an eminent spiritualist assured him that, whether he knew it or not, the spirits were taking part in his performance. He invented, amongst other things, a wooden cabinet in

which disappearing tricks were performed with mirrors, and also a trick box, from which he could make the most extraordinary escapes. He perfected the levitation trick, raising up his assistant and allowing hoops to be passed over him in all directions to show that there were, apparently, no supports. He also had a version of the Indian Rope Trick. A famous contemporary of Maskelyne's, Monsieur de Kolta, invented the trick known as The Vanishing Lady, in which he threw a large piece of cloth over the lady, who was seated in a chair, grasped her round the waist and appeared to lift her above his head, whereupon she vanished at his finger-tips, covering and all. Other famous illusions of the modern stage are Sawing through the Lady, performed with the help of a trick cabinet, and the production of various objects, such as a white rabbit, from an opera hat— usually performed by the skilful palming and concealing of the articles in pockets and up the sleeves.

Nearly all conjurers include 'thought-reading' also in their repertoire, by which they can perform such tricks as guessing a card chosen by the audience, or 'reading' a message concealed in an envelope. They rely on all kinds of different methods, but usually on a code system between themselves and a confederate. The simplest of these tricks are within the range of the amateur conjurer, and innumerable trick objects of the simpler kind are on sale to the public, including two-headed coins, and fake card-packs, cigarettes, and match-boxes.

CONTORTIONISTS, *see* ACROBATS.

CONTRACT BRIDGE, *see* BRIDGE.

COR ANGLAIS, *see* WOOD-WIND INSTRUMENTS.

CORNET, *see* BRASS INSTRUMENTS.

COUNTRY DANCING, *see* FOLK DANCING; FOLK DANCING, BRITISH.

COURSING. This is the hunting of game by dogs solely by means of sight. Coursing has been pursued against various animals, including deer and foxes; but it has now grown to mean the pursuit of a hare by a pair of greyhounds. It is a very old sport, much followed by the people

COURSING
An engraving from the 18th-century magazine, *Rural Sports*

of Assyria and Egypt, for instance, who lived in the kind of open country suitable for hunting down quarry by sight and speed. In A.D. 150 the Greek historian Arrian wrote a full description of coursing, giving the rules of the sport, which rules have not changed much to the present day. By Queen Elizabeth's reign coursing had become a very popular and fashionable sport in England. At this time the first known set of rules in England were drawn up by Thomas, Duke of Norfolk; but it was not until the time of Charles I that public coursing trials took place. In 1776 the first coursing club, Swaffham, was established by the then Duke of Norfolk, and this was followed by a great many other clubs throughout England and Scotland. In 1858 the National Coursing Club was founded, and drew up a universally accepted set of rules. This Club supervises the sport and publishes a Stud Book, in which the pedigree and history of any greyhound can be registered by its owner. The most important coursing event is the open Waterloo meeting at Altcar near Liverpool, where the Waterloo Cup is contested.

A public coursing event is conducted as follows. A hare is driven out into the open; whereupon two greyhounds are slipped simultaneously from their leash. From then on their performance is judged by six points: speed; the 'go-bye' (when one hound, starting a clear length behind the other, passes him, and gets a clear length in front); the turn (when the hare is turned at not less than a right angle); the wrench (when the hare is turned at less than a right angle); the kill; and the trip (or unsuccessful effort to kill). The judge follows the contest on horseback. The competition is on a knock-out principle, the winner of the first tie playing the winner of the next, until only two dogs are left. This kind of coursing competition has been in recent years superseded to a great extent by GREYHOUND RACING (q.v.), where the dogs pursue a mechanically propelled hare.

Private coursing, where the object is to make a kill, often for the sake of the pot, has been carried on for centuries all over the country, and is a common form of poaching. The prey is as often a rabbit as a hare.

See also HUNTING, HISTORY OF; HARE HUNTING.

CRAPS, *see* DICE.

CRIBBAGE, *see* CARD GAMES.

CRICKET. **1.** EQUIPMENT AND RULES. Cricket is played with a cork and twine ball encased in leather, weighing between 5½ and 5¾ ounces, with a maximum circumference of 9 inches. The bat may not be more than 4¼ inches in its widest part nor more than 38 inches in length. The two three-stump wickets, each 9 inches wide and 28 inches high, are set 22 yards apart on a pitch on which the 'creases' are marked with white lines. There are two umpires who

are the sole arbiters of the game. A cricket team consists of eleven men. The captains of the two teams toss, the winner deciding which side shall bat first. In a two-innings match the team batting second may be required to 'follow its innings' if its first innings score is less than that of its opponents by 150 runs (200 in Australia) in a match of three days or more, by 100 runs in a two-day match, or by 75 runs in a one-day match. The side scoring most runs wins the match provided that its opponents have completed, by being dismissed or by declaration, its agreed number of innings.

2. METHOD OF SCORING. The batting side scores by making runs or by 'extras'. A run is scored when the batsmen, after one of them has struck the ball, run to the opposite wickets, each batsman reaching the wicket with either his bat or any part of his body grounded behind the popping crease before the fielding side can break the wicket with the ball. When the batsman strikes the ball full pitch over the boundary, he scores six runs; if it touches the ground before reaching the boundary, he scores four runs.

'Extras' are added to the score for 'no-balls', 'byes', 'leg-byes', or 'wide-balls'. If the bowler delivers the ball illegally, a no-ball, scoring one, is counted, unless the batsman strikes the ball and scores runs from it. Byes are scored when the batsman makes runs from a ball which he has not hit, but which the fieldsmen have not stopped. Leg-byes are scored when runs are made from balls which have touched any part of the batsman except his hands and bat. A wide-ball is one which, in the opinion of the umpire, is bowled so high or so wide of the wicket that the batsman cannot reach it.

The batsman is 'out', and his innings ended, in the following ways. If the bowled ball hits the batsman's wicket dislodging the bails, he is 'bowled'. If the batsman strikes a ball which the fieldsman catches before it has touched the ground, he is 'caught'. If the wicket-keeper puts the wicket down while the batsman is out of his ground but not attempting a run, he is 'stumped'. If the wicket is put down with the ball when the batsman is attempting a run, he is 'run out'. If any part of the batsman's body except his hand stops a ball which, having pitched in line with the wicket or on the off side of it, in the opinion of the umpire would have hit the wicket, he is 'l.b.w.', that is, 'leg

before wicket'. If in playing at the ball the batsman hits the wicket with either his bat or his body, he is out 'hit wicket'. If the batsman strikes the ball a second time with his bat or his body, except to prevent its hitting his wicket, he is out 'hit ball twice'. If he wilfully obstructs the opposing side, he is out for 'obstructing the field'.

3. PLACING THE FIELD. Bowlers bowl in 'overs' of six balls each (eight in South Africa and Australia). Overs are bowled from each end of the pitch alternately, no bowler bowling two consecutive overs. The ball must not be thrown or jerked, and the bowler, at the moment of delivery, must have at least part of one foot on the ground behind the bowling crease and within the return crease.

One of the fielding side is the wicket-keeper, and the remaining nine players are disposed about the ground at the discretion of the captain and bowler so long as they are not in a position to interfere with the batsman. The recognized fielding positions are shown in the diagram on p. 156, but variation of them may be dictated by a particular batsman's strokes or a particular type of bowling.

4. BATTING. There is a certain basic technique of batting on which every great batsman, even one as apparently unorthodox as Jessop, founds his strokes. First of all, the bat should be gripped comfortably—the right hand at least as low as the middle of the handle, and the left just above it. (A left-hander, of course, substitutes 'right' for 'left'.) The batsman's stance at the wicket should be easy: he should be able without further adjustment of his original stance, to move into any stroke-position. It should allow him room for an easy and straight back-lift of the bat as the bowler's arm comes over. The right foot should act as a firm pivot, while the left goes to the pitch of the ball (except when playing a cut).

In all forward shots the batsman's left toe should point down the line of the ball's flight, the left elbow well up, the head down ('smell her' as the old coach, Tom Emmett, used to say), and the ball played with the bat very close to the line of the left leg. Neither foot nor bat should be extended beyond the limits of comfortable balance. In back-play the left elbow should be kept well up, the head over the bat at the point of impact, and the body close to the bat.
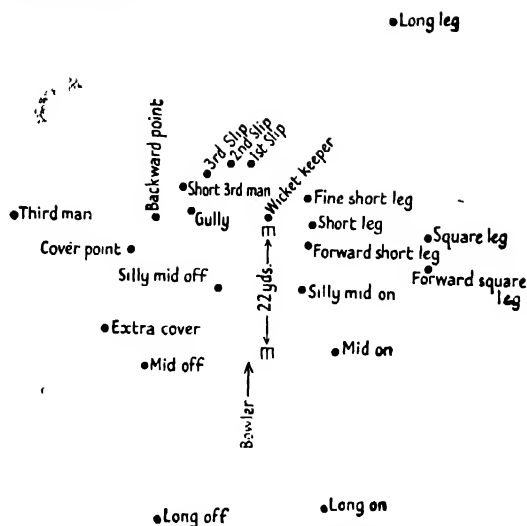
1. COMFORTABLE STANCE

2. FORWARD DEFENSIVE STROKE

3. BACKWARD DEFENSIVE STROKE

4. THE POSITION FOR AN OFF-DRIVE

From Jack O'Connor, *The Young Cricketer's Manual*, Thorsons Ltd.

Long leg

Backward point

3rd Slip
2nd Slip
1st Slip

Wicket keeper

Short 3rd man

Fine short leg

Third man

Gully

Short leg

Square leg

Cover point

Forward short leg

Silly mid off

22 yds.

Silly mid on

Forward square leg

Extra cover

Mid on

Mid off

Bowler

Long off

Long on

CRICKET PITCH SHOWING THE POSITION OF THE FIELDERS

There are profitable strokes to be made with a crooked bat by an experienced player, but even he does not use them early in an innings. The bat should run along straight lines, any flourish of the bat is a waste of energy. A batsman must choose a bat of the right weight and length: a bat too heavy or too long will restrict his stroke. In running between the wickets the first run should always be taken quickly.

5. BOWLING. A bowler's run should be smooth, and just long enough to bring his delivery to the required speed, with no check in run or swing. The bowling arm should come over high, and the ball be released at the highest point of the swing. He should follow through with arm and body in one smooth movement—from the right foot to the left.

A bowler's first task is to bowl a length—that is, he must aim to pitch the ball so that the batsman cannot play forward to it with certainty nor play back with comfort. This point varies with the reach, height, speed of foot, and method of different batsmen, and must be adjusted to each. People who talk of a bowler 'pitching consistently on a spot the size of a soup-plate' are speaking ignorantly. If you place an opened newspaper on the pitch about 6 feet in front of the batting crease, and then try to land the ball on it each time in a normal over, you will see how difficult it is to control both the length and the direction of a ball. Good

coaches teach young cricketers to bowl on a short pitch to develop accuracy without overtaxing their strength.

The bowler aims to vary flight and length—not exaggeratedly, but so slightly that the batsman does not notice, and yet enough to cause him to mistime his stroke. With run, direction, and flight controlled, the bowler can turn to swing or spin. There are two swings—in-swing and out-swing; and four spins—off-break, leg-break, top-spin, and googly. The in-swing moves from off to leg in the air, the out-swing from leg to off; the off-break comes from off to leg after pitching, the leg-break from leg to off. The googly is an off-break bowled with a leg-break action to deceive the batsman who is watching the bowler's hand; and the top-spinner is overspun to come fast off the pitch. The in-swing and the off-break are comparatively easy for a right-arm bowler to control, the others not so easy. The bowler, though he may experiment, should never sacrifice length or direction—no amount of swing or spin can compensate for loss of those essentials. Photographs on page 157 show the grips for leg-breaks and off-breaks; but many bowlers have discovered, by experiment, other grips which give them more satisfactory results.

A good bowler makes the utmost use of the crease, bowling sometimes from the extreme edge, sometimes from very close to the stumps, and from varying positions between. A ball delivered from a foot behind the stumps without change of action will often unsettle a batsman. A good bowler always looks for the batsman's weakness and plays on it, though he must retain the element of surprise and variety. Above all, the successful bowler always believes that he is going to take a wicket.

6. FIELDING. A man, though neither an outstanding batsman nor bowler, may yet be worth his place in a cricket team; but a poor fieldsman, whom the captain has to 'hide' in the field, is never worth his place. The poor fieldsman has an unsettling effect on bowlers; the dropped catch may turn a game—has, in fact, turned more than one Test Match. Any man able to play cricket at all can make himself into a good fieldsman—with practice. Fielding practice sometimes tends to be neglected, batting and bowling practice being taken much more seriously in many clubs and schools. If one or both sides of a practice-net are taken

1. THE GRIP FOR AN OFF-BREAK BALL   2. THE GRIP FOR A LEG-BREAK BALL

From Jack O'Connor, *The Young Cricketer's Manual*, Thorsons Ltd.

down and batting and bowling continued with some of the players fielding out, good fielding practice can be obtained, which actually increases the value of the batting and bowling practice.

In ground fielding the close-fielders should tense on to their toes, and the out-fielders should start to walk, leaning slightly forward, and also on their toes, towards the wicket, as the bowler begins his run: quickness in starting is essential in an out-fielder. He should attempt to get both hands to the ball, and, whenever possible, his feet and body behind his hands. A basic rule of fielding is never to snatch at a catch. Again, the fieldsman, when throwing in a full toss to the wicket-keeper, should aim at his chest; otherwise, the wicket-keeper should receive the ball as nearly as possible in the middle of the first bounce, but never as a half-volley. No fieldsman should throw at the wicket direct except when trying to run out a batsman—the ball passing close to the stumps is the most difficult for the wicket-keeper to take. Fielders must always 'back-up' both to strokes from the bat and throws-in, moving into the line the ball

will take if the fielder in front fails to stop it. This is an essential of good fielding.

7. WICKET-KEEPING. More catches will normally go to the wicket-keeper than to other members of the team; in addition, he will have opportunities of making stumpings and of completing the movements that run out batsmen. In short, the wicket-keeper is a vitally important member of the fielding side. Moreover, because of his good opportunities for observing the bowlers and batsmen, he is best qualified to advise the captain or even to captain a side. He should also prevent 'byes', and run out batsmen from those strokes which only the wicket-keeper can field. Sometimes a wicket-keeper allows byes because he was anticipating the chance of a catch or a stumping which did not in fact mature. This attacking policy is worth the loss of a few byes—indeed wicket-keepers who regard opportunities of taking wickets as of secondary importance, may be little more than efficient long-stops.

The wicket-keeper needs much practice in all types of throws-in, and against bowling on or outside the leg-stump. He should take an easy,

crouching stance from which he can move quickly. His body should be behind the ball when he takes it: it should enter both his hands smoothly, the hands 'giving' to it with no tendency to snatch. A wise wicket-keeper will attempt to stump whenever he makes a quick 'take' and feels that the batsman may be out of his ground. This applies particularly to leg balls, in playing at which the batsman is often likely to drag his right foot. Few players who come to it late take well to wicket-keeping. If a young man has a liking for it, he should be allowed to concentrate upon it.

8. CAPTAINCY. 'The captain is the keynote of the side, the source from which it takes its colour. It is practically impossible for a side to rise superior to its captain. He makes or mars everything. He can nullify the strength of a good eleven, or he can make a weak one stronger than it really is'—those words of Ranji's, written 50 years ago, summarize cricket captaincy, and show by implication how rare the ideal cricket captain is.

A good captain must know and play cricket well, so that he may be able to lead his team well and to have their respect and confidence. One of his chief problems is that of humouring his bowlers in the placing of the field, when their ideas and his do not coincide. He must be able to judge when to give way to them and to override them without shaking their confidence. He must decide when it is wise to change batting order or bowling methods to meet particular situations, and also when it is wise to declare his innings closed. A captain has a reasonable right to demand the major share of selecting the team he is to captain. He must have confidence in his team and know how to exploit, not only their assets, but the weaknesses of his opponents.

See also CRICKET, HISTORY OF; CRICKET, COUNTY; CRICKET, TEST.

CRICKET, COUNTY.

The County Cricket Championship is the chief English cricket competition, and its matches provide most of the first-class cricket programme every year. The seventeen 'first-class' counties take part, a player being eligible to play for the county of his birth or for one in which he has lived for 1 year, having not played for any other county for at least 2 years. Though matches between counties had been played before that date, 1872 is usually

regarded as the start of the County Championship. A points-counting system was first introduced in 1890. The counties were divided into first and second class in 1888, and a Minor Counties Championship was introduced in 1895. After many changes in methods of scoring and match-allocation, the competition is now conducted on the following lines. Each county must play twenty-eight matches per season, must play each of the other sixteen counties at least once, and may not play more than fourteen 'home' matches in the competition.

Points are scored as follows: (1) In a completed match the winning side scores 12 points, or in the case of a tie, each side scores 6 points. If the losing side led on the first innings, it scores 4 points. If the sides were level on the first innings, the losing side scores 2 points. (2) In an uncompleted match the side leading on the first innings scores 4 points, or if the sides tie on the first innings, each side scores 2 points. (3) Every match arranged counts as a 'match played', even if there is no play: if no result, even on the first innings, is reached, neither side scores points. (4) Subject to confirmation by the M.C.C., the county scoring most points in any season is the winner of the County Championship.

The original members of the county championship were Gloucestershire, Kent, Lancashire, Middlesex, Nottinghamshire, Surrey, Sussex, and Yorkshire. In 1891 Somerset joined the competition. In 1895 the following counties came in: Warwickshire, Essex, Hampshire, Leicestershire, and Derbyshire. (Although Derbyshire had been playing county matches for some years and had won the County Championship in 1874, they were not regarded as regular competitors until 1895.) In 1899 Worcestershire was admitted, in 1905 Northamptonshire, and in 1921 Glamorganshire, bringing the number up to the present seventeen.

Up to 1948 Yorkshire had won the Championship most often with 22 victories, Notts. were second with 12, and Lancashire third with 11. The winners between 1873 and 1948 were:

1873 Notts. and Glos.	1881 Lancashire
1874 Derbyshire	1882 Lancs. and Notts.
1875 Notts.	1883–4–5–6 Notts.
1876–7 Gloucestershire	1887–8 Surrey
1878 Middlesex	1889 Surrey, Notts., and
1879 Notts. and Lancs.	Lancs.
1880 Notts.	1890–1–2 Surrey
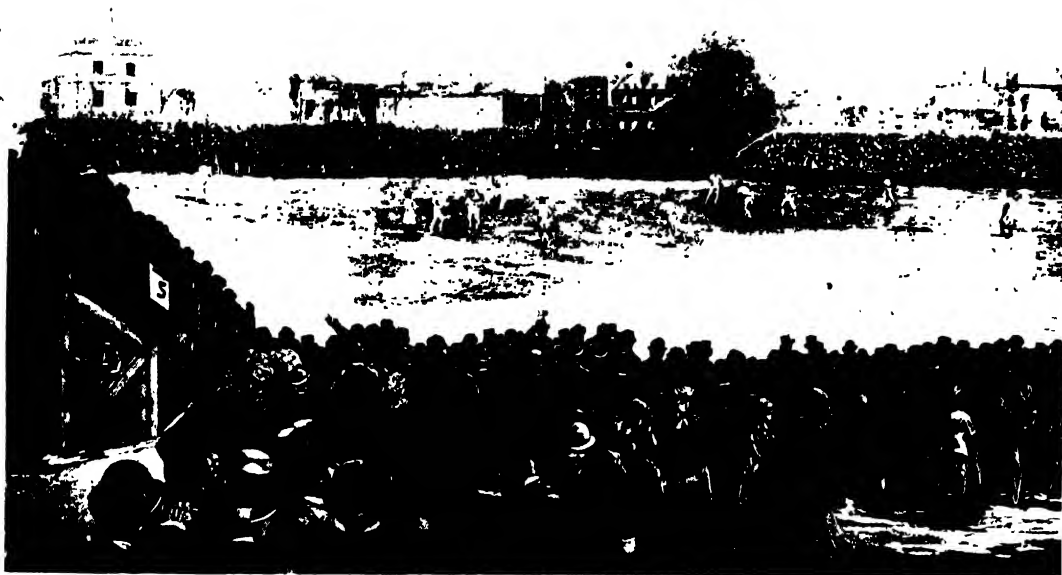
A MATCH BETWEEN ENGLAND AND AUSTRALIA AT KENNINGTON OVAL, 1882
From the *Illustrated London News*, 1882

1893 Yorkshire	1914 Surrey	1895 Norfolk, Durham,	1922-3 Buckinghamshire
1894-5 Surrey	1915-18 Not contested	and Worcestershire	1924 Berkshire
1896 Yorkshire	1919 Yorkshire	1896-7-8 Worcestershire	1925 Buckinghamshire
1897 Lancashire	1920-1 Middlesex	1899 Northants. & Bucks.	1926 Durham
1898 Yorkshire	1922-3-4-5 Yorkshire	1900 Glamorgan, Dur-	1927 Staffordshire
1899 Surrey	1926-7-8 Lancashire	ham, & Northants.	1928 Berkshire
1900-1-2 Yorkshire	1929 Notts.	1901 Durham	1929 Oxfordshire
1903 Middlesex	1930 Lancashire	1902 Wiltshire	1930 Durham
1904 Lancashire	1931-2-3 Yorkshire	1903-4 Northants.	1931 Leicestershire II
1905 Yorkshire	1934 Lancashire	1905 Norfolk	1932 Buckinghamshire
1906 Kent	1935 Yorkshire	1906 Staffordshire	1933 In abeyance
1907 Notts.	1936 Derbyshire	1907 Lancashire II	1934 Lancashire II
1908 Yorkshire	1937-8-9 Yorkshire	1908 Staffordshire	1935 Middlesex II
1909-10 Kent	1940-5 Not contested	1909 Wiltshire	1936 Hertfordshire
1911 Warwickshire	1946 Yorkshire	1910 Norfolk	1937 Lancashire II
1912 Yorkshire	1947 Middlesex	1911 Staffordshire	1938 Buckinghamshire
1913 Kent	1948 Glamorganshire	1912 In abeyance	1939 Surrey II
		1913 Norfolk	1940-5 Not contested
		1914-19 Not contested	1946 Suffolk
		1920 Staffordshire	1947 Yorkshire II
		1921 Staffordshire	1948 Lancashire II

The Minor Counties Championship is played on a regional basis. Two-day matches are played, most of them in August, and there is a final three-day 'Challenge Match' between the two top counties. Some of the first-class counties have second teams which play in the Minor Championship. The winners between 1895 and 1948 were:

A county cricket team can be composed of both professional and amateur players. The captain of a team is generally, but not always, an amateur. One of the most popular annual

cricket matches is that of Gentlemen v. Players, played between amateurs and professionals at Lord's. Almost all cricket clubs have the services of at least one professional player, who not only plays for the club, but is responsible for the upkeep of the ground, and for coaching members of the club at the nets.

See also CRICKET; CRICKET, TEST.

CRICKET, HISTORY OF. The origins of cricket are obscure. It is probable that it was played in England as long ago as the 15th century. The game seems to have evolved from the merging of two or more basic club-and-ball games.

Cricket matches had been advertised in the Press for some years before 1709, when the first county cricket match, between Kent and Surrey, is recorded. The first known rules were drafted in 1744. They set the length of the pitch at 22 yards and the size of the two-stump wicket at 22 inches high and 6 inches broad. No rule·governed the size of the bat, which was often very long and curved like a hockey-stick. From 1744 also, comes the earliest preserved match-score—that of the match between Kent and All England, played at the Artillery Ground, Finsbury, and won by Kent by one wicket. Although cricket was being played, particularly in Kent, Sussex, and London, few important cricketing names have come down to us from these years.

The Hambledon Club was started in about 1750, but it did not become of importance in cricket history until about 1768. In this Hampshire village a team of cricketers began to make a name for itself when it was able to challenge, and even to defeat, an All-England team. The Hambledon Club became an important influence in the development of cricket. The history of this famous club was recorded in *The Young Cricketer's Guide and the Cricketers of My Time* by John Nyren (written down for him by Charles Cowden Clarke)—still the greatest literary work on cricket. The two outstanding players of Hambledon were 'Silver Billy' Beldham as a batsman and David Harris as a bowler. John Small senior, maker of the first recorded century, Richard Nyren the captain, Tom Sueter the wicket-keeper, Brett the fast-bowler, Noah Mann, the gipsy, a big hitter and great fieldsman, and Tom Walker, the opening batsman, are also immortalized in Nyren's book, and were obviously men so gifted at cricket as to have been certain to succeed at the game in any age. This full account of the Hambledon era enables us to form an accurate picture of the game at that time. Bowling was still, in general, literally bowling—the ball was bowled underarm all along the ground—although often very fast.

CRICKET IN THE 18TH CENTURY
From the painting, *Cricket at Moulsey Hurst,* in the M.C.C. Collection
Photo: Sport and General
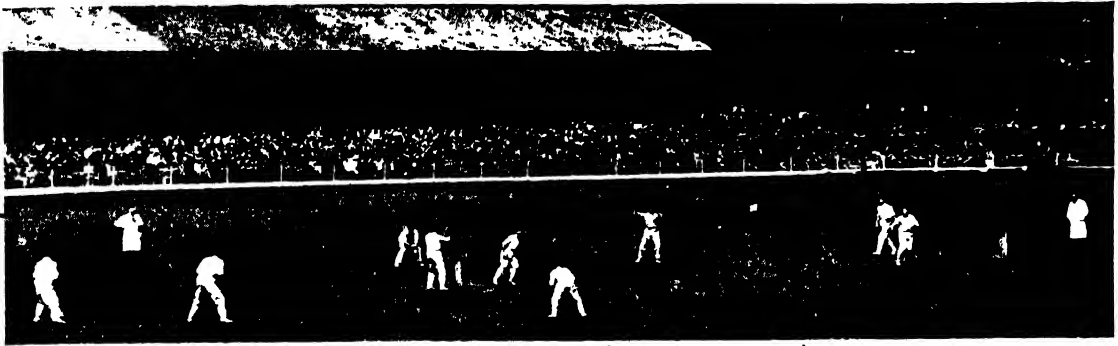
A BATSMAN IS BOWLED IN THE ENGLAND *v.* AUSTRALIA 'VICTORY TEST MATCH' AT SHEFFIELD, 1945
Short leg raises his hands as he appeals to the umpire
Sheffield Telegraph

But, at Hambledon, and through Hambledon, length-bowling began, and the off-break was first bowled. Here, too, forward play, planned strategy in fielding, and skilful wicket-keeping were really developed for the first time. In 1771 the width of the bat was limited to 4¼ inches; some years later the third (middle) stump was added to the wicket.

By 1790 the tide of Hambledon's greatness was ebbing, and in 1796 the club broke up for ever. The windy Hampshire Downs might suit the local countrymen, but the wealthy gentlemen playing and, in many cases, financing cricket were attracted by the London cricket ground opened by Thomas Lord in 1787. In 1814 Lord moved his turf to his present ground, in St. John's Wood Road—still the 'head-quarters' of cricket. His chief tenants, the Marylebone Cricket Club, soon became the ruling authority of the game. The growing superiority of batting over bowling (which was still under-arm), was reflected in the greater scores made in big matches, and caused bowlers to cast about for fresh methods of beating batsmen—which methods were countered by a rule limiting the height of the bowler's hand in delivery to the level of the elbow. In 1819 the height of the wicket was fixed at 27 inches and its breadth at 7 inches. Cricket, up to this time, was invariably played for stakes, with bookmakers accepting bets on the grounds, and players sometimes being bribed. After 1820, however, this practice began to decline.

After the breaking up of the Hambledon Club, Surrey enjoyed a period of greatness, and two north-midland clubs at Nottingham and Sheffield came into the limelight. The problem

of the dominance of batsmen was still unsolved. In 1835, after much opposition, the first great round-arm bowlers appeared, and the rules were altered to permit the bowler's arm to be raised to the height of the shoulder. As soon as round-arm bowling was allowed, there arose a race of fast round-arm 'slingers', who so unnerved batsmen more used to slower deliveries that it seemed as though the opposition to the new kind of bowling had been quite right. But the batsmen soon got accustomed to the new style.

In the 30's and 40's of the 19th century there appeared a very fine Kent team, including famous players such as Alfred Mynn, Fuller Pilch, and Felix. Mynn, perhaps the greatest cricketing figure before W. G. Grace, was over 6 feet in height, and almost 20 stone in weight. He was an immensely fast bowler of the round-arm type, accurate in length, and he could pitch on the leg-stump and hit the off-stump. He was also a big hitter and a brilliant fieldsman. Pilch was an opening batsman, a model of forward play; 'Felix' (whose real name was Nicholas Wanostrocht), a stylish batsman, was also a schoolmaster, musician, painter, and writer.

In 1846 another historic figure of cricket, William Clarke of Nottingham, founded the All-England eleven. Clarke himself was an extremely artful, slow lob-bowler. His All-England Eleven, containing great cricketers such as Felix, Pilch, Mynn, Parr, Guy, Box, and Clarke himself, travelled up and down England playing matches wherever they could be sure of financial reward. Clarke also took teams to small towns and villages which had never before had the chance of seeing first-class cricket.

Disagreements in the eleven eventually caused some of its members to break away, and to form another team—the United All-England eleven. The influence that these two travelling teams exerted can hardly be assessed: they spread the example of well-played cricket all over the country, giving a standard of play to every athletic youth in England.

In 1859 George Parr took the first overseas touring team to America and Canada. Five matches were played, all against odds, and all were won. In 1862 Messrs. Spiers and Pond sent the first touring team to Australia, under the captaincy of H. H. Stephenson.

The problem of how to give the bowler a reasonable chance against the batsman was still a key problem in cricket, for it was still against the rules for the bowler to raise his arm above the shoulder. In 1864, however, over-arm bowling was at last legalized. This was the year when W. G. GRACE (q.v. Vol. V) played his first first-class match and scored his first century. Rejoicing in their new freedom, bowlers indulged in an orgy of pace-bowling; but they were soon tamed by W. G. Grace. In his own play this great cricketer perfected the modern technique of batting, and almost killed professional fast-bowling. That same professional fast-bowling led to greater perfection in match-wickets and, as wickets improved, so did Grace's mastery. He experienced and scored off every type of bowling except the googly, which was not introduced until after his day, and because of his dominance he compelled the development of length-bowling. He was himself a good bowler, bowling round-arm leg-breaks of an excellent length, for which he placed his field on a carefully thought-out plan. His pre-eminence in cricket was due, not only to his arm and eye, but also to his keen mind. He was an amateur, and his personal exploits did much to make the Gentlemen's Eleven capable of facing the Players (or Professionals) for many years. By the end of the 19th century cricket had become part of the life of England and Australia, and had begun to take hold in India, South Africa, the West Indies, and New Zealand.

On the perfect—sometimes too perfect—wickets of the early years of this century, the batting technique of Grace came to its full flowering in C. B. Fry, Ranjitsinhji, and G. L. Jessop. Fry and Ranji on the Brighton wicket were dreaded by every bowler in first-class cricket, Jessop might change the course of any match in an hour. Fry was the text-book batsman come to life; a fine athlete and a fine scholar, he brought batting to a peak of academic perfection. Ranji and Jessop were apparently less orthodox, though actually they merely imposed their rare gifts of eye and limb upon the sure foundations of correct batting. After them came Jack Hobbs, to break one batting record after another. Playing for Surrey and England between 1905 and 1934, he scored more runs (61,237) and more centuries (197) in first-class cricket than any man has ever done. His highest score was 316 not out, and he had a batting average of 50·65. Don Bradman of New South Wales achieved an even higher batting average—95·14—with a total of 28,067 runs. He was, undoubtedly, on a good wicket, the most prolific of all batsmen, and has broken almost every Test-Match batting record. He scored his first Test-Match century against England before he was 21, and he retired from Test-Cricket in 1948. He was also brilliant in the field, and a famous Australian captain.

To contend with these great batsmen, the technique of bowling also developed. F. R. Spofforth, the 'demon bowler' of Australia in the 19th century, had a high action at a pace between medium and fast-medium, and was extremely accurate. He varied his pace according to the state of the wicket, making his off-break, pitched on the off-stump, spin enough to hit the leg-stump. In the historic Test Match at the Oval in 1882, England was defeated for the first time in England—when Spofforth took 14 wickets for 90 runs. B. J. T. Bosanquet of Middlesex introduced the googly, and the South Africans perfected it. S. F. Barnes as a fast-medium bowler, Wilfred Rhodes as a slow left-arm bowler, the Australians Mailey and Grimmett as leg-break bowlers, and O'Reilly as a slow-medium bowler, all set up their records and left their mark upon cricket history. Maurice Tate's bowling came off the pitch relatively faster than that of any other bowler. He had a perfect bowling action. He took more wickets in Test Matches (155) than any other English bowler except Barnes—doing this in the 1920's, a time when English cricket was at a low ebb.

But although in recent years the size of the wicket has been increased and that of the ball

decreased, and although the l.b.w. law has been modified to extend it to the ball pitching outside the off-stump, the batsman in modern cricket is still more effective than the bowler.

The history of cricket in schools goes back to Tudor times, when it appears to have been generally played in the summer. Eton, Winchester, and Westminster were probably the first schools to play, followed by Harrow a few years later. The first accepted fixture between Eton and Harrow was not until 1805, although there probably were earlier matches. From 1827 until 1854 Harrow, Winchester, and Eton had an annual cricket week at Lord's. They were the only schools to play at Lord's, and they enjoyed such standing at that time that they provided more than half the Oxford and Cambridge cricket 'Blues'. In the 1830's three members of the Winchester team were included in the Gentlemen's side against the Players—one of them the legendary 'Dandy' Lowth, a fast-medium left-hand bowler whose physique would have been remarkable even in a man. By the 1850's many of the public schools employed professional coaches and soon developed strong teams.

Possibly the most famous school match in cricket history is that known as 'Fowler's Match', which was played between Eton and Harrow in 1910. R. St. L. Fowler of Eton was the only batsman to show real resistance to the Harrow bowling when his team were all out for 67 against a Harrow first innings of 232. When Eton followed on, he made 64. With one wicket to fall, Eton led by only 4 runs; but the last wicket pair added 50 runs. Then Fowler, taking 8 wickets for 23 runs, bowled out Harrow, and won a match which had seemed hopelessly lost.

See also CRICKET.

CRICKET, M.C.C. The Marylebone Cricket Club, now the recognized governing body of cricket, was formed in 1787. Thomas Lord, who gave his name to the famous London cricket ground, was an employee of the White Conduit Club; in 1787 he rented a piece of land in Marylebone where Dorset Square now stands, and opened 'Lord's Cricket Ground' with a match between Middlesex and Essex. The following season the White Conduit Club and the Marylebone Cricket Club merged, taking the name of the M.C.C. The M.C.C. committee revised the laws of cricket, and has been the accepted authority on these rules ever since. In 1810 higher rent forced Lord to move his ground, and after a short and not very successful venture with a second ground (which had to be abandoned when Parliament decided that the projected Regent's Canal was to pass through the middle), he moved to the ground in St. John's Wood, which still bears his name. The winter of 1813–14 was spent in lifting and relaying the turf from his original ground for the second time, and by June 1814 the wicket was ready, a tavern and pavilion built, and behind a high fence the M.C.C., permanently established at last, played its first match on the new ground, against Hertfordshire. Lord's Cricket Ground is also the head-quarters of Middlesex County, and
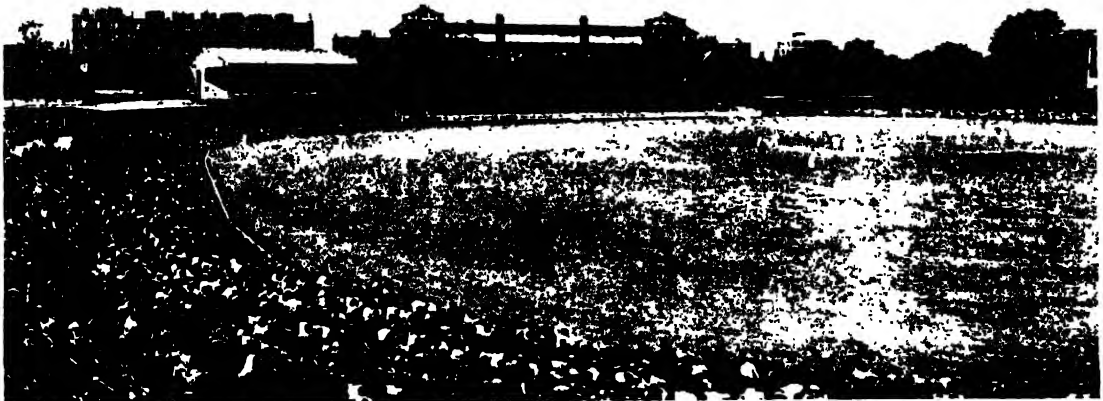
LORD'S CRICKET GROUND
Sport and General

is always used for certain traditional matches such as the Oxford and Cambridge match, Eton and Harrow, and the Gentlemen versus Players match. One of the Test Matches in every series played in England always takes place at Lord's. The M.C.C. arranges many matches for its members and bowling staff. It sends sides to play against schools and clubs, and is responsible for the teams sent overseas to play Test Matches (*see* CRICKET, TEST).

Many famous cricketers have become prominent administrators at Lord's, and have helped to make the history of cricket through the M.C.C. —among them are William Ward, the Hon. Robert Grimston, R. A. FitzGerald, Sir Francis Lacey, Lord Hawke, Lord Harris, Sir Pelham Warner, and Col. R. S. Rait Kerr, the present authority on the laws of cricket.

See also CRICKET, HISTORY OF.

CRICKET, TEST. The term Test Match originally referred only to matches between England and Australia. These began in Australia with a match between J. Lillywhite's English touring team and a Combined Australian Eleven, on March 15th, 16th, and 17th, 1877. This game was won by the Australians. The first Test Match in England took place at the Oval in September, 1880. Except for the breaks

enforced by the two World Wars, the series has gone on uninterruptedly ever since. At first irregular in occurrence and uneven as to the number of games to each series, the tours of the English and Australian Test Match teams are now timed to take place in either country at four-year intervals, each rubber of Test Matches consisting of five matches. In England the matches are usually played at Nottingham, Lord's, Manchester, Leeds, and the Oval, although they have been played at Birmingham and Sheffield. In Australia they are played at Adelaide, Melbourne, Sydney, and Brisbane. In the Test Match played in England in 1882 the Australians won a surprising victory. After the match the *Sporting Times* reported a mock death of English cricket, and declared that the ashes had been taken to Australia. This was the origin of the expression 'The Ashes' which has been used ever since for the rubber between England and Australia.

The name Test Match has now been extended to matches between any of the following countries—England, Australia, South Africa, West Indies, New Zealand, and India. In 1912 a 'Triangular' Test tournament, between England, Australia, and South Africa was held in England, and was won by England. But the competition caused too much disorganization of the English County Championship to be repeated.

In the matches between England and Australia up to 1948, Sir D. G. Bradman (5,028, average 89·78) had scored most runs and most centuries; J. B. Hobbs (3,636, average 54·26) had scored most runs and centuries for England. H. Trumble (Australia) had taken most wickets (141, average 20·88), and Wilfred Rhodes (109, average 24·00) most for England. The record stand for the matches was 451 for the second wicket by Sir D. G. Bradman and W. H. Ponsford for Australia at The Oval, in 1934. Seventeen players, ten English and seven Australian, had scored centuries in their first Test Match. The highest innings total is 903 for seven wickets by England at The Oval in 1938, and the lowest 36 by Australia at Birmingham in 1902.

Test Match results up to 1949

England *v.* Australia (first played 1876–7)
Played 153. England won 55, Australia won 64, Drawn 34.

THE FAMOUS AUSTRALIAN CRICKETER, SIR DONALD BRADMAN
Sport and General

Surrey County Cricket Club.

KENNINGTON OVAL AUGUST 14 15 & 16 1899

ENGLAND v. AUSTRALIA.

ENGLAND		First Innings		Second Innings
1 Mr F S Jackson				
2 Hayward				
3 Mr C L Townsend				
4 K S Ranjit Sinhji				
5 Mr C B Fry				
6 Mr A C MacLaren				
7 Mr A O Jones				
8 Lilley				
9 Lockwood				
10 Rhodes				
11 Mr W M Bradley				
Extras	B lb w nb		B lb w nb	
Total		Total		

1st Innings 1 for   2   3   4   5   6   7   8   9
2nd Innings 1 for   2   3   4   5   6   7   8   9

AUSTRALIA		First Innings		Second Innings
1 Mr J Worrall				
2 Mr J Darling				
3 Mr E Jones				
4 Mr S E Gregory				
5 Mr M A Noble				
6 Mr F A Iredale				
7 Mr V Trumper				
8 Mr C E McLeod				
9 Mr J J Kelly				
10 Mr H Trumble				
11 Mr W P Howell				
Extras	B lb w nb		B lb w nb	
Total		Total		

1st Innings 1 for   2   3   4   5   6   7   8   9
2nd Innings 1 for   2   3   4   5   6   7   8   9

Price 1d.

Umpires A A White & J W Burns Jr   Stumps Drawn 6 pm

A SCORE CARD OF THE TEST MATCH OF 1899

England v. South Africa (first played 1888–9)
Played 74. England won 34, South Africa won 12, Drawn 28.

England v. West Indies (first played 1928)
Played 21. England won 8, West Indies won 5, Drawn 8.

England v. New Zealand (first played 1929–30)
Played 17. England won 3, New Zealand won 0, Drawn 14.

England v. India (first played 1932)
Played 10. England won 6, India won 0, Drawn 4.

Australia v. South Africa (first played 1902–3)
Played 24, Australia won 18, South Africa won 1, Drawn 5.

Australia v. West Indies (first played 1930–1)
Played 5. Australia won 4, West Indies won 1.

New Zealand v. South Africa (first played 1932)
Played 2. South Africa won 2.

See also CRICKET, HISTORY OF.

CROQUET. There was an old game called Pall-Mall (or Pell-Mell) which originated in Italy and came to England through France in the early 17th century. It was played with a ball (Ital. *palla*) and a mallet (Ital. *maglia*). The ball was hit with the mallet through an iron ring suspended in a long alley. One of these pall-mall alleys has given its name to the London street Pall-Mall. Although the name has remained, the game died out in the 18th century. In France, however, where it was played as early as the 13th century, it developed into what we now know as croquet (from the French word *croc* meaning a crook), and was reintroduced to England, during the 19th century. It became very popular as a garden-party game, especially between the years 1860 and 1870, and the All England Croquet Club, formed in 1868, held annual championship meetings at Wimbledon. But, with the introduction of lawn tennis, croquet went out of favour temporarily. It was revived in the 1890's, with improved implements and a more scientific form of play. The Croquet Association, formed in 1896, with which over 100 clubs are affiliated, organizes championships at its Roehampton headquarters.

Croquet is played on a court, generally a fine grass lawn, 35 yards long and 28 yards wide, in which are arranged from six to ten hoops and a peg. There are generally two players on each side, each playing a differently coloured ball. The object of each pair is to pass both their balls twice through each hoop in a set order and finish by hitting the peg before their opponents can do so. As in BILLIARDS (q.v.), a player remains in play until his 'break' is finished. He can continue his break by hitting his ball through the correct hoop (which gives him an extra stroke), or by hitting another ball (which gives him two more shots). If he fails to do either of these, his break is finished and his opponent plays. To hit another ball is to make a 'roquet': after this, with the first of his two extra strokes the player must 'take croquet'.

A GAME OF CROQUET IN THE 19TH CENTURY
From a contemporary drawing by Randolph Caldicott, 1868

To play this, the characteristic shot of the game, the player picks up his ball and places it touching the one it has just struck. He then hits it so that both balls move. An expert can send either ball to any part of the court he wishes, or he can make the other ball travel right across the court while his own ball moves very little. In this way he can further his partner's progress or obstruct his opponent's.

Croquet has always been a private and fashionable pastime rather than a truly popular or public sport. It has a large following in America, where there are many versions of the game and some variations in the rules.

CROSS-COUNTRY RACES. Steeple-chasing and cross-country running have always been more popular as organized sports in England than elsewhere. They are competitive races which developed out of the non-competitive Hare and Hounds (*see* TRACKING). In cross-country running, competitors cover all sorts of ground (road, plough, pasture, and so on), over varying distances up to 10 miles. Many athletes find its diversity more interesting than track racing. Fast track-runners are not always good cross-country men because of the need to keep a steady pace despite changing conditions underfoot. The strain of running for long distances over difficult country makes cross-country racing rather unsuitable for immature competitors, and the best runners are usually developed and experienced athletes. An easy action and fairly even pace over the whole distance will probably bring the best results. In steeple-chasing, fences and other obstacles are added to the hazards of the 'country'. This type of race has now become a standardized track event of 2 miles in Britain and America, and 3,000 metres in Europe. The obstacles are artificial. All cross-country races are team events, each team entering a certain number of runners whose places at the finish count in points: the sixth man home, for instance, scores six points, and the team scoring the lowest number of points is the winner. The English National Cross-country Championship was first run in 1877, and was won 4 years successively, from 1901 to 1904, by the great Alfred Shrubb. An international meeting, in which England, Scotland, Wales, Ireland, France, and Belgium now compete, was instituted in 1903. Apart from half a dozen French victories, England has won the team championship consistently, J. T. Holden winning the individual championship 3 years running, from 1933 to 1935. Other cross-country championships include Regional Counties' (senior and junior) and University competitions.

Long distance road races, except the MARA-THON (q.v.), are not recognized for British A.A.A. records. Athletes who intend to run such distances must build up great stamina through long periods of hard training. Arthur Newton, the South African champion runner, covered 102,735 miles, walking and running, from 1922 to 1935, averaging 20 miles a day—during this time he broke world's records for all distances from 30 to 100 miles. In 1934 he ran 100 miles in 14 hours 6 minutes. The Morpeth to Newcastle Road Race (13 miles 1,000 yards) and the Manchester to Blackpool Relay (50 miles 1,250 yards) are two famous British road events.

See also ATHLETICS.

CROSSWORD PUZZLES, *see* PUZZLES.

CRUISING, *see* PLEASURE CRUISES; MOTOR BOATS; SAILING BOATS.

A CROSS-COUNTRY RACE OF 7½ MILES BETWEEN OXFORD AND CAMBRIDGE UNIVERSITIES IN 1948
Sport and General

CRYSTAL-GAZING, *see* FORTUNE-TELLING.

CURLING. This ancient sport probably originated in Scotland, and certainly owes its present popularity to the Scots. It resembles BOWLS (q.v.), but is played by sliding heavy stones on ice. The first record of the game in Scotland dates back to the 16th century, when stones were taken rough from the nearest river bed, and holes were cut in them for the finger and thumb to make it easier to fling them. At the next stage a handle was permanently fixed into the stone so that it could be thrown even more easily; and finally, all curling-stones were standardized and made circular. Their weight is from 30 to 50 lb.

'Curling rinks', as curling teams are called, are four a side, and each player delivers two stones. The stones are aimed at the 'tee', the centre of a 7-foot circle, marked by a wooden ninepin. The stone nearest the tee scores one; and if two or more stones of one rink lie nearer to the tee than any stone of the other rink, one point is scored for each stone.

Each rink is captained by a 'skip', who gives detailed instructions to the player who is about to deliver the stone. He may ask him to aim a stone as near the tee as possible, to knock out an enemy's stone near the tee, or to 'promote' (knock into better position) a stone belonging to the skip's rink. A good curler can give a 'bias' to a stone, causing it to curl round the opponent's stone to reach the tee, even if the opponent's stone lies between the tee and the point of delivery (called the 'crampet'). He does this by giving a twist to the handle which causes the stone to rotate during its course. According to whether he twists it 'out-handle' or 'in-handle', so the stone will curve to the left or to the right.

While one member delivers his stone, the other members of the rink stand ready with their brooms poised, prepared to sweep the ice if the skip considers that the stone is too slow. There is great difference of opinion about the influence of 'sooping', as sweeping is called. There are sceptics who maintain that sooping has very little effect; but there are others who argue that good sooping adds materially to the distance which a stone will travel. Be that as it may, vigorous sooping does at least serve to keep the players warm.

In the Alps curling suffers from the competi-

THE CURLING RINK AT WENGEN, SWITZERLAND
The Times

tion of SKI-ING (q.v.) so far as young people are concerned, and is mostly the sport of the middle-aged or elderly; but in its mother country, Scotland, its devotees are to be found among young, middle-aged, and old. Perhaps at no other game does enthusiasm rise quite so high as at curling.

CYCLING. The 'penny-farthing' was first made in the 1870's, but real cycling began in 1889, when the invention of the pneumatic tyre and the introduction of what was then called the 'safety' bicycle made cycling safe, easy, and cheap. Improved engineering methods made the bicycle continuously better and cheaper, and to-day there can be few homes in Great Britain without at least one machine. Unlike most other countries, this country neither taxes nor registers the cyclists, and so no exact figures are available as to the number of bicycles in current use. Various estimates have been made, all of them agreeing on a figure over ten million and some going as high as twelve million.

To enjoy cycling, three things are essential: first, the choice of the most suitable machine; second, the adoption of a correct riding position, and thirdly, the proper maintenance of the machine. There are many types of machine, each suited to a particular purpose. The racing machine with narrow tyres, a hard saddle, and deeply dropped handlebars, is unsuitable for normal riding on rough roads. The correct size

A CYCLIST ENJOYING A COUNTRY RIDE NEAR HARTLEY IN KENT. *D. W. Gardner*

of machine is as important as the type, the most important points being the height of the frame and the distance from the saddle to the handle-bars. The best shape for the handlebars is flat, slightly raised or with dropped ends. Racing cycles have deeply dropped bars so that the rider can lean forward to minimize wind resistance; but for touring such a position is very uncomfortable. To get the best out of a machine it should be looked after with care and oiled regularly. A new chain should have an efficiency of 98 per cent., but this can be reduced to 50 per cent. if it is neglected. Tyres should be 'board hard'—soft tyres make riding harder.

There are more than two thousand cycling clubs in Britain, some catering only for sport, or for types such as riders of tricycles, but the majority cover all aspects of cycling—touring, racing, and social life generally. Local clubs affiliate to one or more of the national bodies which control and organize the sport. The National Cyclists' Union primarily controls track racing. It is the only British cycling organization recognized by the International Cycling Union. Road time-trials come under the Road Time Trials Council; massed-start road races under the British League of Racing Cyclists; BICYCLE POLO (q.v.) is controlled by the Bicycle Polo Association of Great Britain; the Road Record Association and the Women's Road Record Association fix the rules for road records; the Cyclists' Touring Club caters for tourists. The C.T.C. and N.C.U. have appointed caterers all over the country who specialize in supplying the wants of cyclists.

See also Vol. IV: BICYCLE.

CYCLE RACING. The first cycle races run in the early 1870's were friendly matches. Later, organized contests were run first in England, the home of the bicycle, and later all over the world.

Present-day cycle racing is divided into two major classes, track racing and road racing.

Nearly every big city in the world has a cycle track, surfaced with concrete, asphalt, or wooden boards, and measuring from ¼ mile to 500 yards round. The turns are banked to allow the riders to get round without slackening speed. On a ·small track, they may be banked as steeply as 50 degrees, and riding on these is like riding along a steep roof. The most popular race is the sprint, in which the riders, from two to thirty or forty in number, race over a short distance, 1,000 metres for instance, (or in England, 1,000 yards). The art of sprint racing is so highly developed that the first lap of most races is ridden at a very slow pace, as the riders finesse for position: the real effort comes in the last desperate dash for the line, with the riders all out only for the last 220 yards. All over the world sprint races are timed over the final furlong, and a first-class champion can cover this distance in 11·6 seconds, which is very nearly 40 miles per hour.

Road racing develops a different type of rider from the track-man. The distances are always long—anything from 25 miles to 24 hours—and occasionally there are races held such as the Tour de France, which lasts for a whole month and takes the riders over 3,000 miles of roads round France, over both the Pyrenees and the Alps. Most international road races are held under 'massed-start' rules, in which the riders start together, the first man across the finishing line being the winner. In England we have developed another type of race, called a 'time trial'. Here the riders start one at a time, with a minute interval between. Each cyclist has to ride alone and unassisted, and must not be sheltered by any other rider. The course is planned so that the competitors return to finish at the starting line, where a timekeeper notes their arrival. A cycling record must first be recognized by the controlling body in the country where it is set up (in Great Britain this is the National Cyclists' Union) and if it is an international record, it must be approved by the International Cycling Union, to which all the national bodies are affiliated.

The world's one-hour record is the finest and fairest test of prowess on a bicycle. It is a track record in which the rider is alone and unassisted. The first one-hour record, of just over 15¾ miles, was set up by F. L. Dodds on the Cambridge University grounds on the 25th March 1876. In those days the machine was the solid-tyred 'penny-farthing' bicycle (see BICYCLE, Vol. IV). As soon as the pneumatic tyre was invented in 1889, speeds began to increase, and in 1898, an American, W. Hamilton, covered more than 25 miles in the hour, on a track at Denver, Colorado. Since then, the record has been pushed higher and higher, until when war broke out in 1939, it was over 28 miles—set up by the Frenchman, Maurice Archambaud. In 1942 the Italian rider, Fausto Coppi, on the Vigorelli Track, Milan, covered 28 miles 885 yards in the hour, a world's record which is likely to stand for some time.

THE MASSED START OF THE NATIONAL CHAMPIONSHIP CYCLE RACE, AT FINSBURY PARK. LONDON, 1946
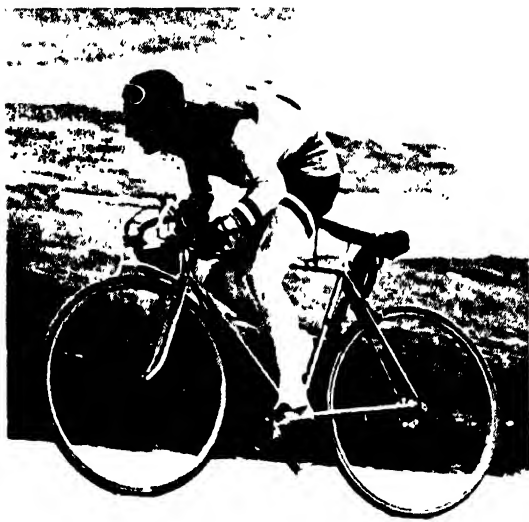
A RACING CYCLIST CLIMBING A HILL IN A LONG-DISTANCE RACE
He carries a spare tyre under his saddle in case of puncture
The Bicycle

A cyclist's biggest obstacle is wind resistance: at 20 miles an hour nearly 90 per cent. of his effort is absorbed in overcoming it. Unable to streamline himself like an aeroplane (except by bending low over his handlebars), he sets about reducing the resistance by having relays of pace-makers to ride in front of him and cut a path into the wind. When the motor-cycle was invented, it took the place of the relays of pace-makers, and as the speed of the motor-cycle increased, so did the world's one-hour paced-cycle record. It now stands at the amazing figure of 76 miles 504 yards. This ride was done by a Belgian, Leon Vanderstuyft, in 1928 on the Montlhéry Autodrome just outside Paris.

WORLD'S TRACK RECORDS (correct to 1948)

One mile (standing start): G. Renaudin (France) 2 min. 0·65. secs.

One mile (flying start): A. Goullet (France) 1 min. 51 secs.

One hour (unpaced): F. Coppi (Italy) 28 miles 885 yds.

One hour (tandem paced): G. Rousse (Belgium) 33½ miles.

One hour (motor-cycle paced): L. Vanderstuyft (Belgium) 76 miles 504 yds.

24 hours (unpaced): R. Weise (Germany) 437½ miles.

24 hours (tandem paced): M. Cordang (France) 616 miles.

24 hours (motor paced): H. Opperman (Australia) 860 miles 367 yds.

BRITISH AMATEUR TRACK RECORDS
(correct to 1948).

Quarter mile (standing start): V. L. Johnson 28 secs.

Quarter mile (flying start): W. J. Bailey 24·8 secs.

One mile (standing start): E. V. Mills 2 min. 1·2 secs.

One mile (flying start): F. W. Southall 1 min. 59·8 secs.

One hour (unpaced): C. G. Marriner 26 miles 1,020 yds.

One hour (tandem paced): F. W. Southall 31 miles 1,457 yds.

One hour (motor-cycle paced): H. Oxley 41 miles 1,634 yds.

24 hours (tandem paced): J. Holdsworth 531 miles 1,500 yards.

BRITISH ROAD RECORDS (correct to 1948).

50 miles (straightaway): H. Earnshaw 1 hr. 39 min. 42 secs.

50 miles (out and home): G. Fleming 1 hr. 59 min. 14 secs.

100 miles (straightaway): H. James 3 hr. 45 min. 51 secs.

100 miles (out and home): R. Firth 4 hr. 17 min. 2 secs.

12 hours (straightaway) : H. Earnshaw 276½ miles.

12 hours (out and home): A. Overton 251⅞ miles.

24 hours (straightaway): C. Heppleston 467½ miles.

24 hours (out and home): C. M. Basham 454·375 miles.

See also CYCLING.

CYMBALS, *see* PERCUSSION INSTRUMENTS.

D

DACHSHUND, *see* Dogs, Breeds of, Section 5.

DANCE BANDS. Music in some form or another has always provided the accompaniment to dancing; and the numbers and kinds of instruments used to play the accompaniment has varied greatly in different countries and centuries. With primitive peoples the accompaniment is provided by hand-clapping and the beating of drums, cymbals, and other percussion instruments of no definite pitch (*see* Percussion Instruments), which emphasize the rhythmic pattern of the dances and provide little or no melody and harmony. Melodic interest is given to the rhythm by the use of drums tuned to various pitches.

One of the earliest combinations of instruments used to accompany country dancing was the pipe and tabor. The pipe had three holes and could be played with the fingers of one hand, while the other hand tapped the tabor, which was a small drum. Thus both the melody and the rhythm were emphasized. The pipe and tabor were known in medieval times, and were popular for centuries in England and on the Continent. In the 18th century it was common to see a solitary fiddler playing for country dancing with no percussion instrument to accompany him: in this case the fiddler had a particular style of playing which emphasized the rhythmic beats of the music. In Scotland in the 17th and 18th centuries, the Jew's Harp (q.v.) was used to accompany dancing. A country-dance band at the beginning of the 19th century would probably have consisted of a small combination of strings, such as violins and 'cellos, and solo wood-wind instruments,

such as the serpent (which derives its name from it shape), oboe, flute, and occasionally a clarinet (*see* Folk Dancing).

Side by side with the development of folk dancing, there grew up at the court in almost every country a form of dancing, which, although frequently based on folk dancing, was nevertheless usually more regimented and formal (*see* Ballroom Dancing). The instruments usually employed for accompanying court balls were those of the court orchestra which was also used for concert purposes. There was, in fact, no distinction between the dance bands and the symphony orchestra. Many of the suites of Bach, Handel, and other composers of the 18th and 19th centuries consisted of collections of tunes suitable for accompanying the dancing of the period. Mozart wrote country dances for the balls at Salzburg and Vienna.

In the middle of the 19th century, however, largely through the work of Johann Strauss (father 1804-49, and son 1825-99) there developed a great interest in the Viennese waltz, which has continued until modern times. The orchestra employed by the Strauss family was

gaulche: Oftant voftre bonnet ou chappeau, & faiuant Damoifelle & la compagnie, comme voyez en cette fi-

Reuerence.

Aprez que la reuerence eft ainfi faicte, redrefferez le corp recouurát voftre tefte, retirerez voftredict pied droict, & mettrez & poferez les deulx pieds ioindts, que nous entend: eftre contenance decente, quand les deulx pieds font telle

DANCING TO THE PIPE AND TABOR
From a 16th-century French book illustration

the symphony orchestra of the period, and the light orchestras which sprang up throughout the world at a later date were only small replicas of the symphony orchestra, their size being governed by financial considerations.

With the coming of ragtime and jazz and their emphasis on 2 and 4 beat melodies, a new type of dance orchestra developed in which any instrument or any combination of instruments could take part. Orchestral instruments were used, but there was no restriction on the type of sound that could be forced from them. Brass trumpets and trombones, shrieking clarinets, and every other possible device were employed to give variety and spice to the playing. This type of music was largely influenced by the rhythm of the negro dance, and great use was made of percussion instruments of all kinds. A continuous and persistent rhythmic pulse was maintained by a 'rhythm section' consisting usually of side drum, piano, banjo, and 'slapped' double bass. Members of the saxophone family

became popular because their insistent and penetrating quality of tone offered a heavier sustaining power than the comparatively weak strings of the orchestra; they were used not only to supply the melodic line, but also to form the main harmonic background on which the other solo instruments might rest.

Among the percussion instruments used (known as the drummer's 'traps') were whistles, cow-bells, tom-toms, gongs, wooden blocks, hooters, and tambourines, and many other methods of producing sound. The element of extemporization was important in jazz playing, the music itself being a mere outline which was filled in by individual players. Jazz bands, therefore, were small combinations of instrumentalists who had intimate understanding of each other's capabilities.

The larger dance bands, such as Paul Whiteman's in America and Jack Hylton's in England, sought to present the modern dance tunes in a symphonic manner, although the emphasis on

A MODERN DANCE BAND
Ted Heath and his band, playing at Alexandra Palace, London. *B.B.C.*

the rhythmic pulse was still very prominent. The accordion and every possible type of percussion instrument have been employed in the search for new colour.

There appears now to be a general tendency in dance music to seek combinations of quieter instruments and to present these in a more artistic way than has been possible during the last 30 years. The employment of such instruments as horn, oboe, cor anglais, and soft flutes are now coming back into popular favour, and the emphasis on the rhythmic pulse is now almost taken for granted and, in consequence, is being subdued and more skilfully presented.

DANCING, HISTORY OF. In the modern world dancing may mean ballroom dancing, which is a means of social entertainment; folk dancing or country dancing, which has grown up among the common people of all races and in many countries is still an essential part of their holiday-making; and the more formal and professional dancing of the ballet, generally performed on the stage by highly trained dancers who use movement as a means of telling a story and expressing emotion.

As simple people can generally more easily express themselves by doing than by speaking, it is natural that dancing should be a very early form of expression. The earliest men were nomads, moving from place to place in search of food and shelter. We do not know for certain whether they performed any dances; but we do know that the people who still do live a nomadic life, the gypsies, have no folk dances of their own, but assimilate the dances of the country in which they travel and live. As people settled down and began to till the soil and keep domestic animals, they began to express in dance their ideas about nature and the supernatural. Most primitive peoples all over the world have propitiated their gods by dance, or have believed in the magical power of the dance to bring about their wishes (*see* RITUAL, Vol. I). The earliest ritual dances were probably very simple movements, such as stepping round in a circle with the arms raised to the sun or the skies; or movements copying the waxing and waning of the moon; or the raising of head and hands to the branches and leaves of the tree. All these dances were performed in order that the quality of the sun, the moon, or the tree might enter into the dancer. As people's religious

ideas developed, so did their ritual dances, some of which were danced round altars in honour of a particular god. Some were performed on special occasions, such as the complicated coming of age INITIATION CEREMONIES (q.v. Vol. 1) for new members of a tribe. Others were intended to increase fertility or bring good fortune in hunting or war. Among some peoples of Africa, South America, and Asia, these ritual dances still exist, and are still a vital part of the life of the tribe; but they are seldom seen by outsiders. All the early dances contain a great deal of MIME (q.v.), in which the dancers act what they hope to bring about. Therefore the beginnings of dance are very closely connected with the beginnings of DRAMA (q.v. Vol. XII).

Dance as an essential part of religious expression was highly developed in the early civilizations of the Near East. Many of the paintings on the tombs of the Egyptian Pharaohs show people dancing before the temples of the gods. In the Book of *Exodus* we read that Miriam, the sister of Aaron, took a timbrel in her hand, and all the women went out after her with timbrels and dancing, in thanksgiving for their safe passage across the Red Sea; and King David, also, is described as dancing before the Ark of the Lord. In the ancient Hindu legends of India, the god Shiva, often called 'the Lord of the Dance', was supposed to have created the world through the rhythm of a dance. Ritual dancing was most highly developed by the Greeks. The emotional effect of the movement, the rhythm, and the music heightened religious excitement and enriched the pattern of the ritual. The dancing, for instance, connected with the worship of Dionysus, the god of fertility, often reached such a state of frenzy as almost amounted to madness.

Gradually Greek dancing became so elaborate and perfected that it grew to have an artistic appeal apart from its religious intention. So, in the same way as GREEK DRAMA (q.v. Vol. XII), Greek dancing tended to become separated from ritual and to move from the temple to the theatre. The word 'chorus' was first used to describe the group of dancers who were an essential part of the performance of a Greek play. Their part was to explain and comment on the emotions and ideas of the play, partly by dancing and partly by singing. The 'orchestra', a Greek word meaning 'dancing-place', originally referred to the semi-circular place in front

of the stage where the chorus danced (*see* GREEK DANCING). The influence of the Greek style of dancing spread widely, particularly across the Caucasus into Russia and eastern Europe, where Greek dances merged with the native folk dances, producing in time a fine style of national dancing.

During the Middle Ages dancing in many European countries tended to develop in two directions, according to whether it was performed in the palaces of princes or in the market-place. But in both cases the dancing still continued to be an expression of the people's predominant emotions and interests. (It is for this reason that anthropologists generally find that the dances of a people are a very good clue to their way of life and character.) Love and courtship are an essential part of the lives of all peoples. A great many dances, therefore, have in them much of the ritual of courtship—indeed, for a very long time, kissing punctuated the music in many popular dances. This drama of

A FLEMISH 'DANSE BASSE'
Miniature from the *Roman de la Rose*, 1510
British Museum

courtship to a greater or lesser extent belonged both to the pattern of the simple country jigs and, with a more gallant artificiality, to the formal court dances. Love-making has always been more obviously linked with dancing than with the other arts. It is for this reason that organized religion, which once monopolized the art of dancing for its own use, has at times been inclined to fear its influence. The early Christian Church had used ritual dancing as part of the church ceremony. But the early Christian leaders came to regard with aversion the riotous and licentious dances belonging to the Roman Bacchanalia, the festival connected with the worship of Bacchus, the god of wine, and the Saturnalia, the festival of Saturn, god of agriculture. This led to the discrediting of dancing as a worldly and evil pursuit; and many Christians began to regard the dancing in religious ritual as evil also, calling it 'the devil's procession'. But there still remained traces of church dancing in Europe, especially in Spain and Portugal, even into the 18th century. Dances, for instance, were performed in front of the high altar as part of the ritual of the High Mass in the cathedrals of Seville and Toledo. In the 17th century the English Puritans preached continuously against dancing, especially against the *branles*, rather wild dances which had come over from France.

By the Renaissance dancing had begun to grow popular as a social activity. Many of the houses of the wealthy, especially in France and Italy, had large galleries or halls where a number of people could perform elaborate dances. Dancing was the only exercise, apart from riding, available for ladies, who, owing to the bad state of the roads, were not accustomed to go out of doors on foot. The formal dances performed at court and in the great houses were known as *danses basses* in contrast to the *danses hautes* or the lively country dances of the peasantry.

In England, however, where class distinctions were less severe than on the continent, the court dances were little different from the country dances. An Ambassador, reporting to Mary Queen of Scots, who had been brought up in France, said that Queen Elizabeth danced 'more highly and desposedly than doth your Grace'. Some of the English dances spread to France, where, under the name of *contredanses*, they became much more polished and less boisterous, and in their new form eventually came back to
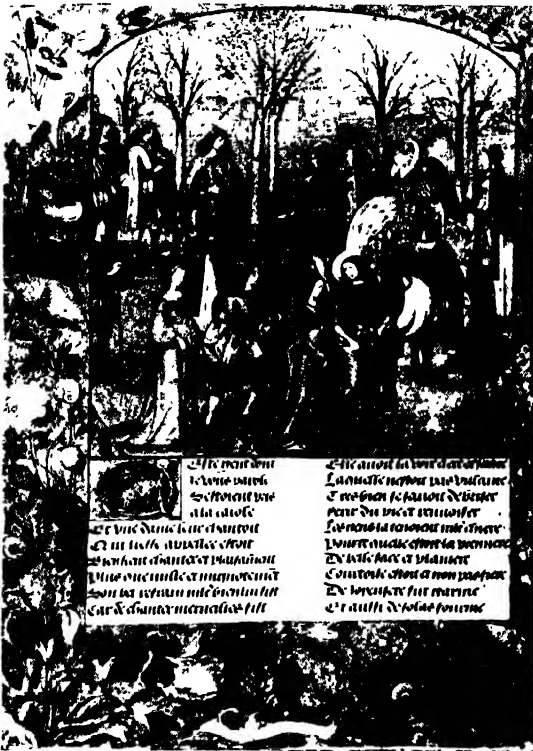
COUNTRY DANCING AT A VILLAGE FESTIVAL.
From a 17th-century painting by David Teniers
Reproduced by gracious permission of H.M. the Queen

England. The French, who were at this time the leaders in the art of dancing, were in the habit of borrowing dances from other countries and polishing and perfecting them. The Volte, an early form of Waltz from Italy, for instance, and the Sarabande from Spain were favourites in the French Courts, until they were superseded by the lighter and more elaborate Minuets and Gavottes (*see* BALLROOM DANCING).

By the end of the 17th century masked balls were becoming popular. These were sometimes enlivened by a masquerade, a sort of pantomime dance performed by masked dancers dressed in fantastic character costumes. In 1715 the Regent of France instituted public balls in the Opera House in Paris, but these were not popular

It is interesting that in general folk dances tend to die out or degenerate as the people grow more sophisticated, instead of evolving into something more mature. The technique of dancing was advanced, rather, by the Franco-Italian dancing masters at the French Court. Dancers such as Beauchamps, Blondy, and Noverre brought an intellectual approach to dancing (which was their business as well as their art), and studied scientifically as far as they were able the technique of dancing in relation to the human body. It soon became necessary to make a dancing notation or choreography, a language whereby dances could be recorded. Attempts to do this date back to 1598. In 1701 M. Feuillet published a complicated system with signs to represent the various movements; but it was too complicated to be practical and was soon abandoned. The technical language of dancing which grew up in France during the 18th century was adapted by other countries, and so words such as chassé, glissade, coupé, bourée, and fleuret are international.

The history of dancing as an art has now become more and more the history of BALLET (q.v.). The beginnings of ballet are to be found in Italy in the late 15th century, from where it spread later to France.   Part of these early ballets were comic dances, probably performed by professional dancers or even acrobats, often representing animals, with quick, lively steps based on country dances. The rest of the ballet, though grand with elaborate patterns, had simple steps, as it was generally acted by members of the court in very splendid dresses.   In several 17th century ballets, for instance, Louis XIV himself took the chief part.   As the ballet developed, there arose of necessity the professional dancer, who concentrated even from childhood on mastering an increasingly difficult technique.

With the rise of the professional dancer, dancing as a skilled pastime has shown signs of declining.   Perhaps there has never been a time when dance music has been more popular or more publicized; but the dancing itself is often inferior—partly because the crowded ballrooms give little opportunity for more than simple movements.   Occasionally elaborate variations, based generally on African folk dances, are introduced, generally in America, but they do not achieve universal acceptance.   A first-rate performance of modern dancing requires more skilful and finished movements than do any of the older dances; but in fact there is very little first-rate dancing off the stage.   The modern tendency is to revive the 19th-century dances. One feature, however, has remained constant, and links the past to the present.   In the modern Palais de Danse, as in the court of the Valois, or the square of the market town, courtship is still the predominant theme of the dance.

See also BALLET; BALLROOM DANCING; FOLK DANCING; GREEK DANCING; DANCE BANDS.

DARTS.   No one can say how old this game is or where it originated; but in its present form it certainly started in the English inn, as a pastime improvised by customers to pass the evening hours.   The round ends of barrels provided the first boards, and the earliest darts must have been primitive things with feather flights bound to them.

The modern dart-board, is normally placed 9 feet from the thrower, with the 'bull' (or centre) 5 ft. 8 in. from the floor.   There are at least five different kinds of board: the usual one has an outer ring for double and an inner for treble scores; the 'Tonbridge' board has triangular spaces within the outer ring, on which the ring counts treble and the triangle double; another type has little circles, counting treble, in the centre of the number space; a board made in Cirencester is much larger than the normal, and has doubles and trebles more than half-an-inch wide.   Another type of board is used in the Midlands for playing 'Fives and Tens'.   The materials from which the boards are made vary from wood or compressed paper to the so-called pig-bristle board or board of rubber composition invented by an Ashford man.   The sequence of numbers, however, is identical on all except the 'Fives and Tens' board.   Reading clockwise it is 1, 18, 4, 13, 6, 10, 15, 2, 17, 3, 19, 7, 16, 8, 11, 14, 9, 12, 5, 20. It will be seen that the numbers have been arranged to sandwich the high between the low figures.   Although there is a region of high averages (known as the 'married man's side' of the board) most players score on the 20 or 19. There are many variations in the darts themselves, from heavy brass darts with paper or plastic flights, to light, sometimes unweighted, wooden darts with feather flights.

Darts can be played with three or four players a side; but pairs or singles give the best game, too many players causing delays and confusion over the order of throwing.   The usual game is
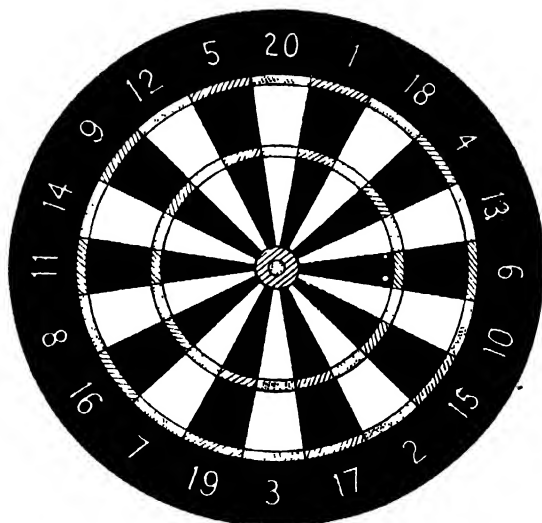
DART BOARD

DANCING A QUADRILLE.

A hand-coloured copper engraving ... 1815

to play three 'legs' of 301, although the legs may be higher or lower according to the number of people playing and the available time. Each player throws in turn, a member of one side following a member of the other. Three darts are thrown at each turn. In order to begin to score, a side must first score a double—any double is allowed: after that each player's score after each turn is deducted from 301, the first side to reach o being the winner. A double must be scored when finishing, and the final shot must get the exact score required. In some pubs, if a 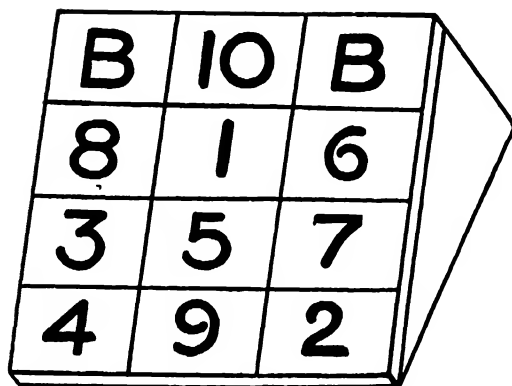throw takes the player's score over the 'score he requires, he has to revert to the score that stood before that turn: this is known as 'busting'. In other pubs he has to revert to his score before he threw that particular dart. In the first method some players bust deliberately to avoid having to get a difficult double to finish. Other games played on the dart-board are 'Cricket', 'Oxo', 'Shanghai', 'Round the Clock', 'Darts Shove Ha'penny', and several variations of these.

There are a great many terms used in darts, such as Bed and Breakfast' for the score of 26, 'Old Lady' for the winning shot, and many others which vary in different parts of the country. The one cardinal rule for darts is to play according to the 'rule of the house'. Sometimes the question of who shall throw first is decided by spinning a coin, and sometimes by the players throwing one dart each, the nearest to the bull becoming the starter. The game may be 'one game straight out' or 'best out of three legs'. It may be a long or a short throw, a high or low board. There may be only heavy darts supplied. The player must take his chance and never attempt to insist on his own rules. Darts is essentially a free-and-easy game with no governing club to decide points at issue.

See also 'PUB' GAMES.

DECK GAMES. Much of the fun of a sea voyage is in playing deck games. They differ, of course, in many ways from games played ashore, and this, perhaps, makes them all the more enjoyable. In the very early days of the steamship, there was little inducement for travellers to leave the shelter of the saloon, or 'Great Cabin' as it was called, and balance themselves on a heaving, pitching deck. Moreover, decks were cluttered up with all manner of obstruc-

FIG 1. BULL-BOARD

tions. Gradually, however, as the steamship developed, rigging was reduced, decks became less obstructed, bigger steadier ships were built, and promenade decks for passengers were introduced. The use of the decks for exercise and entertainment then became possible.

In a modern passenger ship, such as the Cunard White Star 34,000-ton liner *Caronia*, which was specially designed so that she could make lengthy cruises to all parts of the world, designers spent a good deal of time working out how much space on the upper decks could be left completely unobstructed for deck games. The *Caronia* has a main sports deck some 70 feet long by 90 feet wide—the full breadth of the ship —besides several terraced decks leading down to the stern, which alone would excite the envy of the athletic passenger of the 1840's who had to pick his way up and down 20 feet or less of so-called 'open deck'.

One of the earliest deck games, adopted possibly because it did not require much space, was Deck Quoits. It is still popular to-day. Four quoits, made by an able seaman from a rope's end bent into a circle and spliced, and a peg set upright on a wide base, are all that are required. The aim is to throw the quoits over the peg, each player throwing four quoits from a distance of 3 yards. Each quoit which encircles the peg counts one point. The player or side first reaching twenty-one points (or fifteen if a shorter game is preferred) after an equal number of throws has been made, wins the game. A variation of this game is Bucket Quoits, in which the players throw the quoits from a distance of 6 yards so that they drop into the bucket and stay there. It sounds easy, but it is surprising

A GAME OF DECK TENNIS ON THE FIRST CLASS SPORTS DECK OF THE 'QUEEN ELIZABETH'
Cunard White Star Photograph

how often the springy rope quoit bounces out of the bucket.

Another popular game is Bull Board, so called because the left and right-hand top corners of the board are labelled with a B, which is the equivalent of a bull's eye (see Fig. 1). The board is set up on the deck inclined towards a line marked at a distance of 12 feet from the board. Each player in turn takes six rubber disks and, toeing the line, endeavours to throw them, one at a time, on to the divisions marked on the board in the following order: Nos. 1 to 10 consecutively, then the right-hand bull square and the left-hand bull square. The order is then reversed, beginning with the left-hand bull square, then the right-hand bull square and then Nos. 10 to 1 consecutively. At the end of a player's turn the last square he has successfully covered with a disk is noted. A disk touching a line does not score, but as the disks lie upon the board until the player's turn is completed, one disk may drive another from a line into a square, thus scoring. If one of the bull squares is taken out of its correct order the player's score is reckoned back one square: for instance, if a player who has scored up to 7, throws a disk accidentally on to a bull square, his score is put back to 6. The winner is the player who,
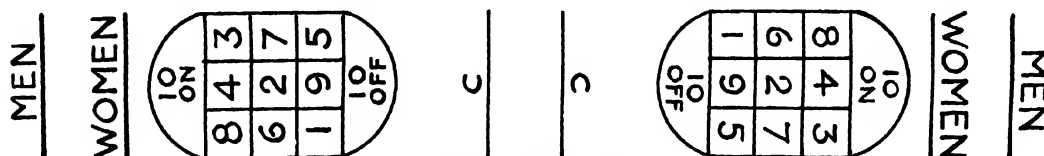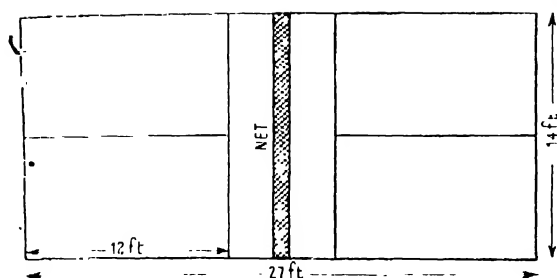
FIG. 2. SHUFFLEBOARD

FIG. 3. DECK TENNIS COURT

with the same number of throws, first accomplishes the full round of the board and returns to No. 1 in the correct order.

Shuffleboard is a game which has long been played enthusiastically at sea. Two areas are chalked on the deck, as in Fig. 2. The game is played with poles with broad flat ends, not unlike oars, shaped for pushing wooden disks along the deck, the players facing each other and toeing the lines marked 'Men' and 'Women'. There are 8 disks, 4 to each side, in two distinctive colours, such as red and white. To score, a disk must lie within one of the arcs or squares without touching the chalk line; the chalked number indicates the number of points to be added, or deducted in the case of the '10 off'. The line marked C is known as the hog line, and a disk failing to cross it is removed from play. The winner, whether in a two-handed or four-handed game, is the person or side first to score 50.

Deck Tennis, the most popular of all deck games, is played as singles or doubles, the serving and scoring being as in LAWN TENNIS (q.v.). A quoit, usually made of rubber, is thrown and caught with the hand over a net which is somewhat higher than that used in lawn tennis. The dimensions of a Deck Tennis court are 14 ft. by 27 ft. There are six games to the set. When taking service the receiver must stand within the service court; if he steps forward into the inside court on receiving or returning a service, he loses the point.

Before it is returned, a quoit must be caught cleanly; fumbling, touching the body or the deck, ringing the quoit over the wrist, or pausing in the act of returning the quoit, makes it a foul catch with the loss of the point. It is a foul to serve or return a quoit with both feet off the ground, that is, while in the act of jumping. A quoit falling on the base or side lines is con-

sidered to be 'in'. If a quoit hits any impediment on the deck and is deflected by it into the court or on to one of the base or side lines, it must be considered 'out'.

See also PLEASURE CRUISES.

DEER HUNTING, see STAG HUNTING.

DEER STALKING. About the middle of the nineteenth century the Scottish Highland forests became the home of the red deer, mainly as a result of the failure of sheep-farming. Since then wild red deer have been stalked and shot in these forests. The magnificence of a well-grown red stag and the beauty of the Highland scenery make up much of the attraction of this sport, which the writings of Sir Walter Scott and the enthusiasm of the Prince Consort helped to make popular. But its popularity has waned in recent years, largely because of its expense.

A knowledge of how deer behave is a first necessity in deer stalking. Although woodland animals, the red deer have adapted themselves surprisingly well to the bare and rocky hills of the Highland forests, which rise to a height of 3,000 feet or more, and, contrary to the usual meaning of the word, are not necessarily wooded. A deer forest, which may vary from 10,000 to 80,000 acres, cannot properly support a stock of more than four deer to 100 acres, and the proportion of the sexes should be about equal. In practice the number of hinds generally exceeds the stags, and has to be kept down to prevent their damaging crops on the lower ground. A wild stag reaches his prime at about 12 or 13 years of age, and then, if conditions are good, he grows his best head. A good hill stag probably weighs over 15 stone. In the early part of the season, from August to September, the stags, having cleaned their horns of the 'velvet' which covers them during their growth, gather together on the high ground. Towards the end of September they start to look for and fight over the hinds, and their roaring can be heard over the hills (see DEER, Vol. II).

The stalking party may be led by a 'gillie' or gamekeeper who knows the country and the habits of the deer. The first thing the gillie does is to 'spy' for the deer through field-glasses. When he has located a herd, he must decide whether it contains a stag suitable for shooting. Then the stalking begins. The sight of deer is fairly good, but though the stalker may be at the

DEER STALKERS ON THE BLACK MOUNTAIN FOREST, ARGYLLSHIRE
They are bringing down the deer from the moor
The Times

to deceive their eyes, he can never deceive their sense of smell—they will scent a man three-quarters of a mile or more away. It is, therefore, very necessary to keep down wind. In big 'corries' or hollows, where the deer often lie, the wind may blow from all directions, and then it is most difficult to approach them. There are certain spots well known to deer where they are almost impossible to approach. The stag has not only to be approached but also separated from the rest of the herd. Then the stalkers try to get within 100 yards before shooting, but sometimes longer shots have to be taken owing to the nature of the ground or the presence of other deer. The shot may be taken lying down, though the best position is to sit with the elbows firmly on the knees—for this gives a better chance of a second shot. It is wise to keep perfectly still after shooting so as not to alarm the deer if he has not been hit or only wounded. Even a very close shot of 30 yards can easily be missed. When the beast is killed, it is 'grallocked' (the entrails removed) to prevent the flesh from going bad.

Almost any accurate full-bore rifle can be used, but fairly light Mauser or Männlicher rifles are the most popular, since they are easy to handle while stalking.

See also BIG-GAME HUNTING; STAG HUNTING; SPORTING GUNS AND RIFLES.

DERBY STAKES. The Derby is the principal horse-race of the year in England, if not in the world, and it is the ambition of all breeders to breed a horse capable of winning it. It is a flat race run over a $1\frac{1}{2}$-mile course of Epsom Downs, Surrey, and is contested by three-year olds. The field is generally made up of colts, but fillies are eligible to run and have on occasions won the race.

Entries for the race are made when the horses are yearlings. Frequently there are more than 250 entries, although in the actual race the runners generally average about twenty. The course is one of the most varied of flat race courses, going uphill and downhill and taking in several bends, the most famous of which is Tattenham Corner, the last bend into the finishing straight. The race, which is run at top speed throughout, is a severe test of stamina, and needs very skilful riding. The winner of the Derby is likely to be the best horse of his day.

The Derby is one of the most popular sporting events in the world. Immediately the horses have flashed by the winning-post, the result is sent by wireless to many parts of the world. When a colt wins the Derby he appreciates by at least 500 per cent. in value, because his owner can command fees ranging up to 500 guineas for his services as a stallion.

The Derby Stakes was first run in 1780, a year after the institution of the Oaks, which is run over the same course but is confined to fillies. Both of these events were founded by

PLAN OF THE DERBY RACE COURSE
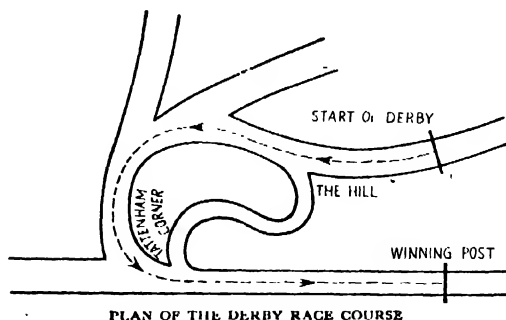
Edward Smith Stanley, the 12th Earl of Derby, whose ancestors had been interested in horse-racing for generations. The 12th Earl won the Derby Stakes with a horse called Sir Peter Teazle in 1787, but the house of Stanley was not successful again until the 17th Earl scored with Sansovino in 1924. The record speed for the Derby is 2 min. 33·8 sec., which was achieved by Mahmoud in 1934.

The Derby is run on the first Saturday in June. As most of the course is free, the race has, from the first, attracted large crowds who come to enjoy the side-shows as much as to see the race. Derby Day at Epsom is certainly a great occasion, especially for Londoners, and from the earliest hours of the morning people make their way to the course. The downs themselves appear like a vast fairground, where fortune-tellers, gypsies, and hawkers of all kinds amuse the crowd and cheat them of their money. On this day, too, strange old-fashioned vehicles are brought out, hansom cabs, and four-wheelers, from the roofs of which the owners hope to get a good view of the race. Frith's 'Derby Day', painted in 1858 and now belonging to the Tate Gallery, London, gives a vivid picture of the scene in Victorian days. There is no reliable way of checking the number of people who attend the race, but when Airborne won in 1946 it is estimated that more than half a million people were present.

See also HORSE-RACING.

DICE are small cubes of ivory, bone, wood, or metal, used in gambling and other games since very ancient times. The word 'dice' is really the plural of the old word 'die', which is now hardly used except in such phrases as 'the die is cast', or 'straight as a die'. The six sides of the dice are each marked with a different number of incised dots in such a manner that the sum of the dots on any two opposite sides shall total seven. Dice are used in board games such as Backgammon and family games such as Snakes and Ladders and Monopoly. There are many kinds of dice games in which one to five dice are thrown on to a smooth surface from the hand or from a dice-box, the object being to throw a certain number or combination of numbers.

Dice found in the tombs of ancient Egypt, Greece, and the Far East are exactly the same, in every important respect, as those used to-day. Although dice games were certainly played before recorded history began, it is impossible to find out exactly where dice were first invented. The Greek philosopher, Sophocles, tells us that they were invented by Palamedes, a Greek, during the siege of Troy. Herodotus believed that the Lydians invented dice and many other games during a time of famine in the days of King Atys. Dicing is mentioned as an Indian game in the Rig-Veda, the sacred book of the Hindus. It seems possible that the first dice games were played in the Far East.

THE FINISH OF THE DERBY, 1949
Nimbus, in the centre, is winning by a head from Amour Drake (right) with Swallow Tail (left) third. *The Times*

Gambling with dice was very popular among the ancient Greeks and Romans. Though the law was generally ignored, dicing was actually declared illegal during the later days of the Roman Empire, and was only officially permitted during the annual Saturnalia festivals. Mark Antony played dice while in Alexandria; and several Roman Emperors, including Nero and Augustus, were extremely keen dice-players. The Emperor Claudius wrote a book on dice games; while Caligula was a notorious cheat at dice. Professional dice-players with 'loaded' dice, which would turn up any number required, took advantage of unsuspecting newcomers to Rome. The special dice they used can be seen in museums to-day.

During the Middle Ages dicing was a popular and fashionable pastime. It remained fashionable throughout Europe up to and during the 19th century, though the gambling on card games and horse racing, which grew in popularity from the 17th century onwards, led finally to a decline in dicing. Various forms of dice game, however, are still played, and dicing remains widely popular in the countries of the Far East, where many of the more complicated forms of gambling are not widely known.

The most popular form of dice game played to-day, especially in the United States, is known as Craps or Crap shooting. Each player puts up a stake, and the first player may back himself against any or all of these stakes. He then 'shoots', that is, he throws two dice from his hand or dice-box on to the table. If the sum of the dice is 7 or 11, the throw is a 'nick' or a 'natural', and the player, or 'crap shooter' as he would call himself, wins all stakes. If the throw is either 2, 3, or 12, it is a 'crap', and the shooter loses. If any other number is thrown, it is a 'point', and the same man continues 'rolling

CANADIAN AIRMEN PLAYING CRAP DICE IN LIBYA
Crown Copyright reserved

the bones' until he throws the same number again—in which case he wins, or a 7—in which case he loses. 'Crap shooters' use many strange and traditional cries with which they encourage the dice to produce the number they want; 'Baby needs a pair of new shoes' is an example.

Another popular game played with dice is Crown and Anchor, which originated in the Navy, and was once the most popular of all gambling games among sailors, though it is now illegal. It is played on a square of oil-cloth, marked with a crown, an anchor, and the four aces. Three dice are used, also marked with these six symbols. One player acts as 'banker'; the others each back one of the six symbols, paying their stakes to the banker. The banker throws the three dice, and each player wins once, twice, or three times his stake according to the number of dice on which his choice appears. If it does not appear at all, the player loses his stake.

Poker Dice are marked with Ace, King, Queen, Jack, 10, and 9. Five dice are used, and the object is in three throws to make combinations similar to those in POKER (q.v.).

See also GAMBLING; BOARD GAMES.

DINGHY RACING.
The development of dinghy racing as a popular sport dates from about 1920. Before the First World War, sailing a dinghy had been regarded by yachtsmen as playing at sailing, a sport fit only for children and the inexperienced. Later, however, in order to provide good sport for people who wanted to sail, but could not afford the very high prices of the larger racing craft, designers gave their attention to producing a more efficient sailing dinghy. Radical improvements in hull design and rig took place, and brought into being a completely new type of craft, which, besides being very much faster and handier, required considerable skill on the part of the helmsman. It has been said that the man who can handle a racing dinghy can handle anything.

Improvements in design took place so fast, however, and new boats had continually to be built, if an owner was to stand a chance of winning, that the sport was getting beyond the means of the people for whom it was intended. To prevent this, the 'one-design' class of dinghy was introduced; and there are now innumerable such classes organized by sailing clubs throughout the country, which make it
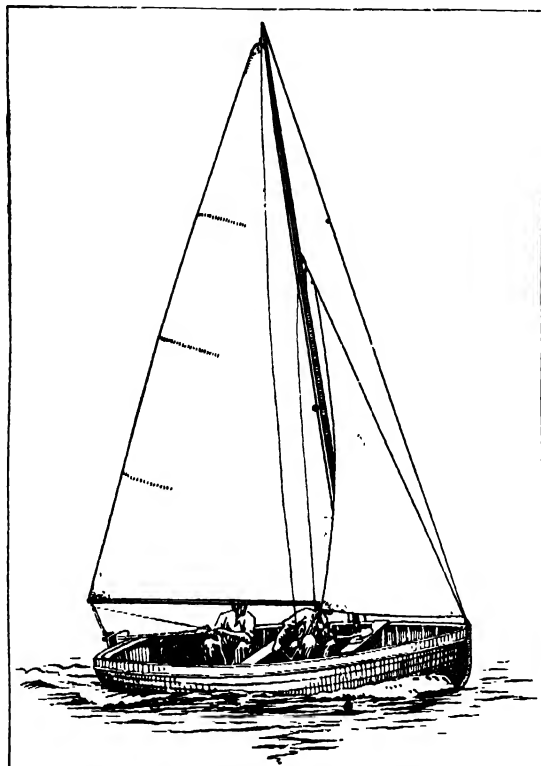
FIG. 1. A DINGHY DESIGNED TO RACE WITHIN THE ISLAND SAILING CLUB RULES AND IN THE 14-FT. INTERNATIONAL CLASS

possible for enthusiasts of moderate means to race on equal terms with their wealthier opponents. A one-design class is a group of boats all of which are built to the same plan, frequently by the same builder, and usually to a price limit. Every effort is made to ensure that all boats are as far as possible identical, so that the results of races shall depend as far as possible upon the skill of the helmsman.

Several yacht clubs run one-design classes specially designed for young people, the most famous of which, the Aldeburgh Redwings, is now nearly 40 years old. These Redwings are sturdy 12 ft. 6 in. craft, and their great beam makes them almost uncapsizable, so that they are perfectly safe for the children of 8 and upwards who sail them. They can easily be recognized by their distinctive turkey-red sails.

Most of these one-design classes of dinghy are variations on the normal type, that is to say, the hull is clinker-built (see SAILING BOATS), usually of sturdy construction, 10–15 feet in length,

fitted with a centre-board and a short, unstayed mast on which is set a standing lugsail. Fig. 1 shows one of the Island Sailing Club dinghies, which is an excellent example of the type. Endless varieties of rig have been used. The standing lugsail type is not normally fitted with a jib, since to get the best of this rig the mast has to be well forward in the boat; but it is quite common to find a small bowsprit fitted, on which a jib can be set. Gaff or gunter-rig dinghies usually have a jib, and the modern racing dinghies, with their incredibly tall Bermuda mainsails, not only set jibs, but also spinnakers and balloon jibs.

These racing dinghies are divided into two principal classes, the 12-foot National design, and the 14-foot International class. The National 12-foot dinghies are a British class built to a specification laid down by the Yacht Racing Association. In this class, before the Second World War, the boat, including the designer's fee, had to cost not more than £50 complete except for sails. The class proved immensely popular, and there are now over 400 registered boats in it. They may be seen at any fairly large sailing centre, and are easily recognizable by their tall Bermuda rigs, which seem out of all proportion to the length of the boat, and by the sail-marking, 'N', above the racing number on the mainsail (see Fig. 2). A Championship Race is held yearly for the class, and there are many other races held in other parts of the country. The 12-foot Nationals are tender craft, and it is by no means unusual for one of them to capsize at mooring from the wind pressure on her mast alone; so that the difficulty of racing them in a fresh breeze, particularly at sea, can well be imagined.

An even more famous racing class is the 14-foot International class. These dinghies are perhaps the fastest small sailing craft yet devised, and sailing in one of them is a wonderful experience, for their sail area is so great in proportion to their length and general stability that intense concentration and considerable physical endurance are necessary to keep them racing. When one of these craft is running before a strong breeze, she will frequently lift her bows out of the water and begin planing at a speed well beyond the theoretical maximum for her waterline length. The dangers of an involuntary gybe (swing across) in such circumstances are very great. The picture which shows these craft reaching in a moderate breeze, gives a fair impression of the delicate balance which must be maintained, and shows also the easily recognizable sail-marking of the class. The 'K' is the International sail symbol for Great Britain.

The 14-foot International is one of the most popular racing classes in the country, well over 400 boats having been registered. It would be even more popular if the boats were not so expensive. Before the Second World War, a well-designed example cost at least £200, and a similar boat to-day would probably cost between £400 and £500, though efforts are being made to reduce the price by economies in building. Moreover, owing to the rapidity with which improvements took place, the boats rapidly became outclassed, and to be successful an owner had to build a new boat at least every 2 years. Despite this, large entries were always received for the many classic championship races, although the majority of the entrants knew, even before the race began, that they had no chance whatever of winning a place. The
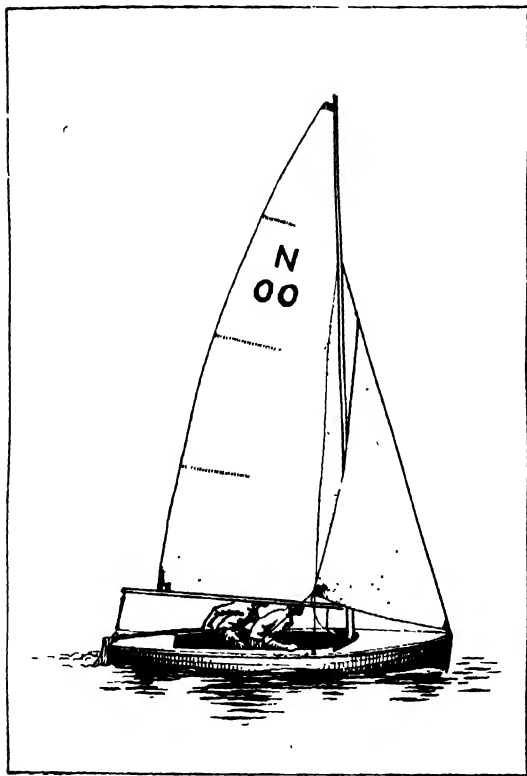
FIG. 2. A 12-FOOT NATIONAL DINGHY

RACING INTERNATIONAL 14-FOOT DINGHIES IN WEYMOUTH BAY.   *Topical Press*

Prince of Wales Race, which is held over an open sea course, is the major annual event in dinghy racing in this country; but there are many other races throughout the year, so that quite apart from his own club races, the helmsman of a 14-foot dinghy has ample opportunities for sport.

See also SAILING; SAILING REGATTA; SAILING BOATS; YACHT RACING.

DIRT TRACK RACING. Motor-cycle racing on tracks with a loose 'dirt' surface originated in Australia and the U.S.A., where motor-cycle enthusiasts practised speeding on the short circuits laid out for ponies or bicycles. Crashes at the sharp bends were frequent until 'broadsiding' was devised—a method of sliding the corners at great speed in long, controlled skids. The rider lays the machine over at an acute angle and, using a metalshod sole on the boot of the inside leg as a pivot, deliberately throws the machine

into a skid. The sliding back wheel flings up a great plume of cinders, which bank up against the wheel, and create a resistance enabling the rider to control the skid, and haul the machine out of it when he is safely round the bend.

Some of the Australian dirt-track experts came to this country in 1927, but were coldly received. In February 1928, however, they induced British riders to take part in a meeting at High Beech, where the Australians showed their greatly superior skill. British riders soon mastered the art of broadsiding, and the sport became popular. In 1948 there were thirteen British tracks with over 200 riders, which attracted gates up to 80,000. Some crack riders earn more than £100 a week. League matches and individual championships are the backbone of the sport, and test matches were often held until the increasing number of British aces gave this country a definite pre-eminence.

The usual length of a British circuit is 440
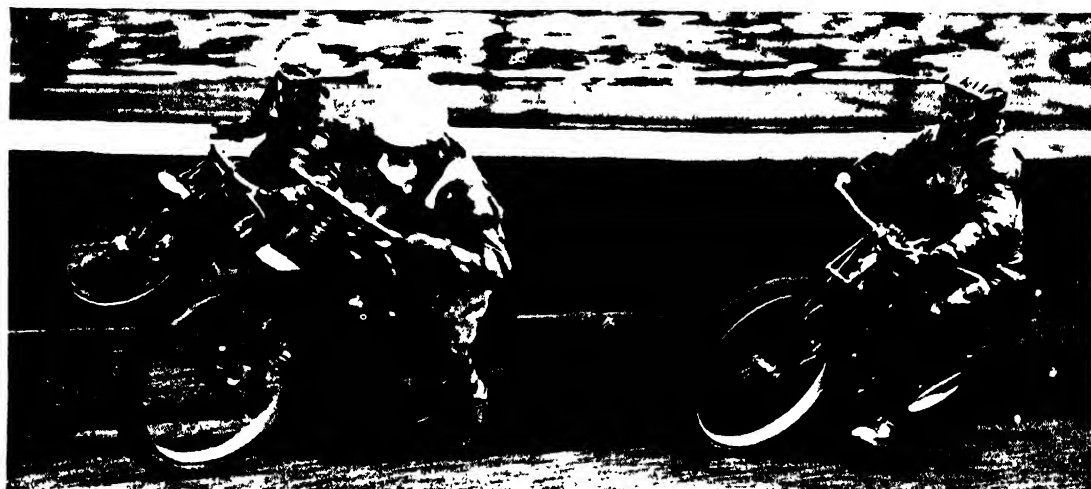
DIRT-TRACK RACING AT NEW CROSS, LONDON
The London Speedway cup tie, 1946, in which New Cross defeated Wimbledon.   *Sport and General*

yards, and a lap speed up to about 48 m.p.h. is possible. Cinders, over a hard foundation, were originally used for the essential loose surface; but they tend to pack up in wet weather, and also a material of a lighter colour, such as decomposed granite or white sand, shows up the racing better under brilliant lighting at night. Mechanical rakes smooth out the 'dirt' after each event. The spectators are protected by a safety fence, constructed of stout flexible netting, which also prevents serious injury to any rider who goes off the track. The starts are by 'gate', as in HORSE-RACING (q.v.), and the first aim of the riders is to snatch the lead at the first bend, after which all pursuers have to go outside the leader until he makes a slip. It is a very spectacular sport: the track is small; the crowd is close to the riders; its yells combined with the racket of the unsilenced engines create a deafening uproar. Fatal accidents are rare; but they seem continuously imminent as the helmeted racers scream round the small oval track in showers of dirt. Betting is strictly prohibited, neither totalisator nor bookmakers being allowed. The sport is very firmly controlled by the Auto-Cycle Union, whose stewards take charge at all meetings.

See also MOTOR-CYCLE RACING.

DISCUS THROWING, *see* ATHLETICS, FIELD EVENTS.

DISNEY CARTOONS, *see* FILMS, ANIMATED.

DIVING. This is not merely the art of throwing oneself from a platform head first into the water: correct movement and control of the muscles are necessary to make a clean cut into the water so that the diver hardly makes a splash. A bad landing can be very painful. Advanced acrobatic diving, as it is performed in the English and International Championships, needs great skill which can only be acquired by long practice under an expert coach. But plain diving can be learned more easily.

Diving can best be learnt in stages, first by jumping into the water feet first, keeping the body straight, and then by going in head first from the side of the bath. The arms should be raised to the full extent above the head, and the body bent forward from the hips until it overbalances. If the feet are kept on the edge as long as possible, the head will hit the water first. As it breaks the surface, the body should be straightened. When confidence has been gained by practice, the beginner should give a little jump, flicking the legs straight behind him. The next step is to dive from the straight position. The diver extends his arms in front at shoulder height, lowers them to the sides, and then brings them up smartly to the full height, at the same time taking a jump slightly forwards and upwards, stiffening the muscles of the whole body, and dropping the head slightly. This will cause the body to turn and enter the water head first. This is the 'English header' and can be done in the same way from any height.

For the 'Swallow Dive' (see Fig. 1) the take-off is the same as for the header; the arms swing forward and upwards, but the movement is continued until the arms are extended sideways straight from the shoulders. The chest is stuck out and the head held back. As the body comes into line with the water the arms are brought smartly together and the head dropped at the same time. The head acts as a rudder and controls the flight: if it is dropped too soon the diver will go over on to his back. Another simple dive is the 'Pike' or 'Jack-knife'. The take-off is similar to that of the 'Swallow', but as the diver gets to the full height of the jump, he bends smartly and touches the toes, then opens out for entry.

Diving off a springboard is an essential preparation for fancy diving. The purpose of a springboard is to give additional height to a dive. Running dives off a springboard should be taken steadily, and the distance measured before the dive. With his last step, the diver jumps on the end of the board and swings the arms forwards and upwards to give him the 'lift' off the board.

There are a large number of acrobatic dives which can be performed by a skilled diver. Among these are the Front Jack-knife, the Back Dive (see Fig. 2), and many variations of somersault diving. Acrobatic dives can be performed either from the springboard or from a fixed platform. Most baths have several of these plat-

FIG. 2. THE BACK DIVE
Paul Popper

forms, varying usually up to a height of 10 feet above the water. It is essential that the water in the bath is deep enough. For diving from boards up to 16 feet, there should be $8\frac{1}{2}$ feet of water for reasonable safety.

Diving competitions consist of a specified number of dives to be performed by each competitor. As each is completed, the referee blows a whistle, and each of the judges (usually five, sitting in different positions) holds up a card showing the number of points (maximum 10) he awards. These marks are taken down by the recorder. To avoid favouritism and bad judging, the highest and lowest awards are cancelled and the total of the remaining three is averaged out. The competitor with the highest number of points at the end is the winner. As some dives are harder than others, each is awarded a degree of difficulty. These figures are taken into consideration when working out the average.

There are three main types of diving competitions: plain diving, highboard diving, and springboard diving, the last two being acrobatic. With plain diving there is a set test which all competitors must complete, but with acrobatic diving the usual practice is to have a number of compulsory dives and a similar number of voluntary dives. This is to give the experts a chance to perform the more difficult dives.

See also SWIMMING.

FIG. 1. THE SWALLOW DIVE
Fox Photos

DOG RACING, *see* GREYHOUND RACING.

DOGGETT'S COAT AND BADGE, *see* BOAT-RACES.

DOGS. Many old writers have tried to explain the existence of different types of wild dogs in different parts of the world by supposing that some were derived from WOLVES, some from JACKALS, some from FOXES (qq.v. Vol. II), and so on—a theory for which there is no scientific basis of truth. It is only comparatively recently that any definite facts have been elicited regarding the origin of dogs.

A few years before the First World War, the Russian scientist N. A. Iljin carried out a long series of experiments with wolf-dog crosses at the Moscow Zoo, from which he conclusively proved the wolf and dog to be identical in all the important respects of mating, gestation periods, and maturing. These facts, in conjunction with

BEWARE OF THE DOG
Roman watch-dog from a mosaic floor tile found in the ruins of the ancient Roman city of Pompeii
Museo Nazionale, Naples

anatomical and other considerations, suggest the probability that all the varieties of the domestic dog have originated from the single wild species, *Canis lupus.* The theory that the jackal or the fox had any part in the origin of the dog is anatomically impossible, and they cannot interbreed in spite of the stories of dog and fox hybrids which appear from time to time.

Dogs of to-day have many habits which are relics of their wolf ancestry—turning round and round before lying down, and scratching back the earth to cover their excretion being two of the most common. The wolf and the wild dog do not bark, but howl; but Iljin proved by experiments that the wild dog can be taught to bark, and that the domesticated dog, if isolated for some time, will forget how to bark and will revert to a wolf-like howl.

How, then, did it come about that the wild dog became the friend of man? We know that dogs have been domesticated for a very long period because dogs' skeletons have been found in camp refuse heaps of the Neolithic age; and bones of dogs, obviously domesticated, have been found buried with their owners in prehistoric graves of some 8000 years B.C. In graves dating from 6000 B.C. two distinct breeds can be recognized, one a small dog somewhat of a terrier type, and the other a much larger dog, probably of the mastiff or flock protective type.

The dog was probably man's first domesticated animal—long before domesticated food-giving animals. Earliest man lived by hunting, and therefore would have come up against wild dogs. He may have headed off animals chased by packs of wild dogs, and from that have reasoned that the dog could be useful to him in hunting. Perhaps he may have flung some unconsidered trifles of the carcass to his helper in the chase, and wild dog, quick to learn, may have followed man to his camp for more. There the dog would learn the pleasure of the warmth of fire, and of the free meals provided by scavenging in the refuse middens just outside man's camp. This, in fact, is exactly the relationship between the uncivilized AUSTRALIAN ABORIGINES (q.v. Vol. I) and the DINGO (q.v. Vol. II) to this day.

Wild dog would gradually become less timid; a puppy or two, in all probability weaklings, would be left near the camp and adopted and tamed by the women or children. The process of the domestication of dogs would then be well advanced.

DOMESTIC DOGS IN THE 17TH CENTURY
'A LADY RECEIVING A LETTER' by Ludolph de Jongh (1616–79). *By permission of Anthony de Rothschild*

At first dog's only help to man would be in hunting, and unwittingly in scavenging—tasks for which wild dog was well fitted by nature. In due time, as man became more settled and began to keep flocks of other domesticated animals, he would discover how a dog could help him in other ways. Some dogs would quickly show their willingness to act as herd dogs and as guards. By selective breeding from those dogs which excelled in some particular point, various distinct breeds would be evolved. Those which showed the greatest strength and alertness would be mated together to produce the guard dogs, and those with well-developed speed and scenting powers would be bred to produce hunting dogs. At the height of the Egyptian civilization we have definite evidence of the existence of several distinct breeds of dog: indeed, in tombs as old as

3,000 years B.C. and older are to be found wall-paintings and also the mummified bodies of dogs of several breeds, such as the Greyhound, the Mastiff, and even pet Toy Dogs.

Hunting being the great occupation of the majority of medieval country people, it is hunting dogs about which we hear most, the pastoral breeds of dogs being almost ignored. Chaucer, too, only mentions the 'Greihoundes', various kinds of stag-hounds, such as the Limer, the Alaunt, and the Talbot Hound, and the Spaniel. A book called the *Mayster of Game*, and written by a cousin of King Henry IV, between 1406 and 1413, describes 'Running Hounds', 'Greyhounds', 'Alaunts', 'Spaniels', and the 'Mastiff'.

In 1486 the *Boke of St. Albans*, believed to have been written (at any rate the parts on hunting) by Juliana Berners, the Lady Prioress of Sopewell

Nunnery, gives a most enchanting list of the 'dyvers manere Houndes', which includes the 'Grehoun', 'Mastif', 'Spanyel', 'Teroures' (which can be recognized as Terriers), 'Butchers houndes' (which were probably dogs for baiting the bull, and the original of the Bulldog), 'pryck-eared curs', and 'small ladyes popees that bere away the fleas'!

The next addition to our knowledge of the breeds of dogs in this country is given in the book *Of Englishe Dogges*, published in 1570 and written in Latin by Dr. Caius, physician to Edward VI, Mary, and Elizabeth, and founder of Caius College, Cambridge. Dr. Caius attempts to classify the various breeds of dogs by families, dividing the 'Generous or Thorough-Bred' dogs into 'Hounds', which included the Terrier, Harrier, and Bloodhound; 'Hunting Dogs', the Greyhound and other dogs which hunted by sight; 'Hawking or Fowling Dogs', which were the Spaniel, Setter, and Water Spaniel; and 'Delicate Dogs' which only consisted of the 'Spainel gentle, or Comforter'. Those breeds which were not 'Generous or Thorough-bred' Dr. Caius classified as 'Country', consisting of the Shepherd's dog, and the Mastiff or Band-dog, and as 'Degenerate', by which he presumably meant Cross-Bred and Mongrel.

The French naturalist, Georges Buffon, made a similar attempt in the 18th century to classify the breeds of dogs in a *Table de l'ordre des chiens*, and he tried to show that they were all evolved from the 'shepherd's dog'. In 1800, in *Cynographia Britannica* by Sydenham Edwards, we are given probably for the first time accurate illustrations of the various breeds of dogs existing in England, and excellent descriptive matter on their properties and uses.

It is a far cry from prehistoric man to a Cruft's Dog Show of to-day, and the Canine race has made vast strides since the first wild dog was domesticated. There are now about 92 different breeds and varieties recognized by the British Kennel Club, and for which classes are provided in Dog Shows (q.v.) in Britain; while at least 300 different breeds and varieties of dog are known throughout the world, not counting those that have become extinct.

See also Vol. II: Dogs.

KING CHARLES SPANIEL
Thomas Fall

DOGS, BREEDS OF. 1. HOUNDS. The hounds of the chase common in Britain to-day are the Beagle, Foxhound, Harrier, and Otterhound. How they were evolved is very complicated: in all probability all these hounds owe a great part of their origin to the old St. Hubert Hound of the Continent. From this breed the Stag-Hound was probably evolved, and in due course the Harrier, Beagle, and Foxhound.

The Basset Hound is probably the nearest to the original hound, and he originated in the Vendée, Poitou, and Normandy districts of France, where he was used for hunting in packs. Packs of Basset Hounds have in the past frequently been formed in England for hunting the hare; but Basset Hounds are now seldom seen in Britain except as show dogs.

OTTER HUNTING (q.v.) has been a favourite sport from the days of King John, but it is not certain what dogs were then used. The present day Otterhound is generally accepted as being descended from the old Southern Hound, crossed with the Bloodhound, probably also with some breeds of Continental hounds, and with the old, rough-coated Welsh Hound. The modern tendency is to cross-breed extensively with the Foxhound.

WIRE-HAIRED FOX TERRIER
Thomas Fall

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HARE HUNTING (q.v.) is a very much older sport than FOX HUNTING (q.v.), and the hounds for the latter were evolved from the Harrier packs when they started to hunt the fox—it being found that a larger and stronger hound was necessary for this quarry.

2. THE GREYHOUND GROUP. Which variety of Greyhound is the oldest is a moot point; but there is no doubt that the breed originated in or around Egypt. The earliest drawings in the tombs of the Pharaohs—some of them more than 2,000 years B.C.—show perfect specimens of Greyhounds, Salukis, and Afghan Hounds. It seems certain, therefore, that these three varieties originated about the same time, and the long-haired variety, being found more suitable for the hot, sandy countries, migrated eastwards. Carvings on the walls of the Balkh caves of Afghanistan of about 2200 B.C. show that already an Afghan Hound, almost the same as the modern Afghan, was established in that country. Although frequently mistaken for the Afghan Hound, the Saluki is quite a distinct variety. As he did not migrate to a country with cold winters,

he did not require the thick coat and profuse feathering of the legs of the Afghan variety; his fine silky coat is, in fact, only to protect him from the sand.

It is not certain whether the Greyhound, which we know as the coursing and racing dog of to-day, came to Britain via the Continent, or was brought direct from the North African coast and the Balearic Islands by the Phoenician traders; but it is a fact that the Greyhound, and coursing the hare with him, was established in Britain before the Roman invasion (see COURSING). With such a long history, it is not surprising that the origin of the name Greyhound is lost in antiquity. It certainly has nothing to do with the colour grey: very likely it is derived from the Latin *gradus*, meaning 'degree' or 'rank': all old writers refer to the Greyhound as 'the principal amongst all dogs'. The breed has not altered at all through all this long period, for, although the Crusaders brought back Eastern Greyhounds, including Salukis, these when crossed with English specimens merely made a return to the original blood. Various experi-

WELSH TERRIER
Thomas Fall

DALMATIAN BITCH WITH HER PUPPIES
Thomas Fall

ments in cross-breeding have been made from time to time, but none has lasted.

A very long time back the Scottish Deerhound and the Irish Wolfhound were evolved from the English Greyhound, as it was found that a more powerful dog than the smooth Greyhound was required to tackle stags and wolves. The Deerhound was probably produced by crossing the Greyhound with the old English Mastiff and with some indigenous shaggy-coated hound, such as the old Welsh Hound. It was certainly an established breed by the 16th century, as it is mentioned in Boece's *History of Scotland* published in 1530, and a contemporary book has an illustration of a dog hardly different from the modern Deerhound.

The Irish Wolfhound is undoubtedly an exceedingly ancient breed, as it frequently appears in the earliest Irish history, legend, and art, and continued to be well known for hundreds of years. The last wolf in Ireland having been killed somewhere about 1750, the need for this magnificent dog no longer existed and within a hundred years the breed had become almost extinct. About 1870, however, Captain Graham, of Gloucestershire, set about reviving the breed from a few degenerate specimens of Wolfhounds obtained from the extreme west of Ireland, which he crossed with the Scottish Deerhound, Great Dane, Borzoi, and Mastiff, as he believed all these had been used in the make-up of the original Irish Wolfhound. In course of time his experiments proved a success, and so we still have the breed to-day.

The Egyptian Greyhound also migrated eastwards to central Europe and Russia, where the rough-coated type was found most suitable.

Coursing of the wolf was a favourite pastime of the Russian aristocrats, and very early it must have been found that a larger and more powerful dog was required than the Greyhound which had come from central Europe. In consequence the Borzoi was evolved—though what other dogs were used in its make-up is not known. The breed has certainly been carefully bred for hunting in much its present form as far back as there is record.

3. GUNDOGS. Although firearms were not in general use for sporting purposes until the beginning of the 18th century, the history of many of the gundog breeds goes back much farther. From early days dogs of various kinds were used to assist in the capture of game by hawks (*see* FALCONRY), and with the use of nets. The 'Spaynel' is mentioned by Chaucer in the *Wife of Bathe's Tale*, and in a book of about the same date, *The Mayster of Game*, the earliest English book on sport, there is a description of Spaniels and 'Couchers' (or Setters, from the French *coucher*, to lie down), and their use with hawks.

It seems certain that the earliest 'Game finding dog' was some kind of Spaniel and we are told in *The Mayster of Game* that this dog owes its name to the fact that 'their kind cometh from Spain'. The various 'sitting' or 'setting' dogs were certainly developed from this original Spaniel, a very different dog from the short-legged Spaniel of to-day. The name Spaniel, sometimes qualified by the word 'sitting' or 'setting', was, in fact, generally used for the Setter until fairly recent times—indeed, even to this day in remote parts the Irish Setter is sometimes called a Spaniel. By 1570 it appears that

PEKINESE
Thomas Fall
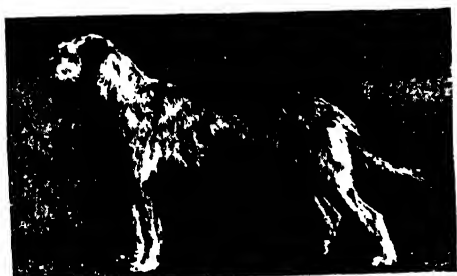
BASSET HOUND

MINIATURE FRENCH POODLE

GREYHOUND

LABRADOR RETRIEVER

IRISH WOLFHOUND

MANCHESTER TERRIER

WELSH CORGI

COCKER SPANIEL

BREEDS OF DOGS. *Thomas Fal.*

H

the Setter was recognized as a breed distinct from the Spaniel. We now have three varieties of Setters, the English Setter, of which the blue and white flecked, known as Blue Beltons, after a village in Northumberland, is exceedingly handsome; the black and tan Gordon Setter, evolved by the Dukes of Richmond; and the beautiful rich golden-chestnut Irish Setter.

The Pointer, which performs much the same work as the Setter, originated in Spain and was introduced into Britain about 1720. It was, in the first instance, crossed with the setting Spaniel of this country, and it is probable that some hound blood was also used to produce the Pointer of the present day.

The carrying instinct, inherent in most breeds of dogs, was made use of by sportsmen from very early times. Dr. Caius, in 1570, wrote of dogs that brought back 'boults and arrows' which had missed their mark, and Spaniels were certainly used for bringing back wounded and dead game even before the advent of the sporting gun. But it was not until 'shooting flying' had become established, well into the 18th century, in fact, that sportsmen set about evolving a dog solely to retrieve game. In 1848 Colonel Hutchinson, in his book *Dog Breaking*, gives pictures of the various cross-breeds suitable for retrieving; though none of the breeds we know to-day were fixed at that time. Starting with Spaniels and Setters, they were crossed with the Newfoundland, the Collie, the Irish Water Spaniel, and, in the case of the Golden Retriever, with some Russian Circus dogs, to produce the breeds of Retriever we have to-day. The best known of these is the Labrador, which is either black or yellow. Golden Retrievers are also very popular; but the black Flat-Coated Retriever and the Curly-Coated, with a black or liver coloured coat of tight, crisp curls, are now seldom seen.

4. TERRIERS. From very early days man has hunted vermin, chiefly foxes which live underground, and for this the assistance of a dog which could go underground was essential. In a 14th-century manuscript there is a picture of three men, assisted by a dog, unearthing a fox. The *Boke of St. Albans* (1480) in its list of 'diverse maner houndis' enumerates 'Teroures', and just 90 years later Dr. Caius wrote of a dog 'which hunteth the Fox and the Badger or Greye only, whom we call Terrars, because they creep into the ground, and by that means make afrayde, nyppe and bite the Fox and the Badger'. So

here we have definite proof of the existence in the 15th and 16th centuries of terriers, called by that name and used for precisely the same task as at present. Clearly the name is derived from the Latin *terra*, 'the earth'.

Unfortunately, these old writers give practically no description of how these dogs worked underground. The Duke of York, author of *Mayster of Game* (1413), gives a list of breeds of dogs in which he mentions 'small curs that come to be terriers'; so in all probability any small 'cur' who would go to ground, and was bold, was called a terrier.

In the early days of fox-hunting as an organized sport we know that definite breeds of terrier, such as the white English Terrier (now extinct) and the Black-and-Tan (now called the Manchester) were coming into being. It is probable that most of our present-day breeds of terriers owe their origin to the selective breeding that started about this time, each district breeding favourite types most suited to their particular country. The most universal terrier in the British Isles was a rough-haired, black-and-tan terrier, which is now extinct, but believed to have a very nearly pure descendant in the modern Welsh Terrier.

The terriers recognized by the Kennel Club to-day are: Airedale, Australian, Bedlington, Border, Bull, Cairn, Dandie Dinmont, Irish, Kerry Blue, Lakeland, Manchester, Norwich, Scottish, Sealyham, Welsh, and West Highland White.

5. TOY BREEDS. Ladies' small pets and lap dogs have been in favour since the beginning of history. In Egyptian tombs of very early date pet dogs are depicted, as well as hunting dogs; and it is known that in Grecian and Roman times the ladies of those Empires had their pet dogs, and imported suitable breeds, notably the Maltese, from other countries.

On a tomb in Deerhurst Church, Gloucestershire, dating from about 1400, are brass effigies to Sir John Cassey and his wife Alice, and at the lady's feet is depicted her pet dog, whose name 'Tirri' is inscribed beneath. In the delightful list of breeds given by Dame Juliana Berners (1481) pet dogs are mentioned; and later writers refer to ladies' pets as 'Comforters'.

Many breeds of Toy Dogs have been evolved by dwarfing sporting breeds, achieved by breeding from miniature freaks. The Miniature Black-and-Tan-Terrier, the Italian Greyhound, the

King Charles Spaniel, and the Yorkshire Terrier have been evolved in this way. Others are imported foreign breeds (probably evolved in a similar manner) such as the Pug, the Pomeranian, and the Pekinese. The Pekinese was unknown in England until 1860, when five of them were found to have been left behind after the sacking of the Peking Summer Palace by the Anglo-French expedition against the Chinese. The smallest of these, which was given the name of 'Looty', was presented to Queen Victoria, with whom she became a great favourite.

It is doubtful whether the Poodle originated in France or in Germany, although he is generally regarded as the national dog of the former country. But there is no doubt that he came to this country from the Continent, and that he is an exceedingly ancient breed, originally essentially a working dog, and used as such to this day on the Continent. The *Sportsman's Dictionary* of 1723 speaks of the 'water dog', and gives a description which might easily fit the Poodle, explaining the necessity of clipping him so that he is 'less hindered in swimming'. Because of his excellent nose and high intelligence the Poodle is much used in the evolution or improvement of several British sporting breeds, and since the Victorian era he has been a great favourite as a companion dog. The Dachshund, another favourite domestic dog, was brought to Britain from Germany by the Prince Consort. The name means 'badger-dog', and he was used as a hunt-dog on the Continent. His headstrong disposition, however, makes him not very easy to train. Recently efforts have been made to use him in this country as a Terrier, above and below ground, and for hunting in a pack.

See also Vol. VI: Dogs, Working.

DOGS, CARE AND MANAGEMENT.

1. Housing: If he is going to be an outdoor dog, either completely or partially, a dog will require comfortable draught- and weather-proof sleeping-quarters; some space under cover in which to move about, and where food and water receptacles can be placed; and also an open-air enclosure where he can take more exercise. If the garden has a dog-proof fencing the dog can be given the whole run of the garden—by far the best way of keeping a companion dog. Alternatively, a portion of the garden can be fenced off with strong diamond mesh wire netting, sufficiently high to prevent his jumping out,

and continued underground to prevent his burrowing.

The best form of kennel for an outdoor dog has the sleeping compartment and a small run combined under one roof, the run having an iron-barred front which can be covered by shutters. The dog's entrance door can be left open all day, while the sleeping-compartment remains always well sheltered. There should be a large door so that the kennel can be easily cleaned.

The dog's bed should be on a good, strong bench, raised on legs a few inches from the floor, and with sides about 4 inches in height. A sack, or old pillow tick, filled with straw or with wood shavings makes a warm, comfortable bed. This

DOG ON A RUNNING CHAIN
R.S.P.C.A.

box bed should be constantly cleaned, and occasionally scrubbed and dried in the sun; and the mattress cover should be washed or renewed.

It should not be necessary to keep a dog chained up; but if this is essential the dog should not be chained to the kennel, but to a 'running chain'. A strong wire is suspended about 4 feet from the ground between two posts, and on this is a large iron ring to which the dog's chain is attached. The chain should be light, and adjusted in length so that the dog can lie down in comfort or stand up and move about without getting it caught round his legs. If the wire is fairly long, the dog can move about with some freedom, instead of being restricted to the small semicircle which is all the kennel chain allows.

2. Grooming and Exercise. For his well-being a dog requires a regular, thorough grooming each day—if possible at the same time each day so that he gets to look forward to it. It is

most convenient to place him on a bench or low table. He should have a thorough brushing with a good stiff-bristled dog brush, first against the lie of the hair and then with the coat. He should be held firmly by the skin of the throat, and treated with firmness and gentleness, being talked to all the time. A final rub over, in the direction of the coat, with a chamois leather or a soft cloth will give the coat a fine polish. All grooming gear must be kept scrupulously clean, and all dead hair removed and burnt. The collar should be well wiped with a clean rag, and occasionally given a dressing of soft soap.

The grooming period makes a good opportunity for a daily routine inspection of the dog for signs of ill-health or parasites. Fleas or other parasites should be removed and drowned in paraffin.

No dog will take sufficient exercise by himself, even if he has unlimited freedom in a large garden; and so he requires regular walks. Walks, preferably taken at the same time every day, should be varied and interesting; some 'off-lead' in the open country or in parks where permitted, and others 'on-lead'. On-lead walks are a useful part of discipline, and pavements and hard roads harden and condition the feet and keep the claws at reasonable length.

The amount of exercise necessary varies greatly with the breed of dog: he ought to be healthily tired without being overstrained or showing signs of distress. A 6-mile sharp walk is none too much for a healthy, full-grown terrier. A dog kept entirely in the house, without access to a garden, will require short outings several times during the day, if possible on to waste grass; a run outside is essential last thing at night, as early as possible in the morning, and after each meal.

3. FEEDING AND HEALTH. A dog is a flesh-eater, and his stomach is comparatively small and adapted for taking highly concentrated food. In his natural wild state a dog kills his food, tears it from the carcass, and swallows it un-masticated. To make up for this lack of mastication a dog's mouth produces large quantities of saliva which is the first stage of digestion, and the gastric juices of the stomach are exceedingly strong—strong enough even to dissolve bones. A dog, therefore, needs to lie quiet after his meal to permit his gastric juices to work. One suitable meal per day is sufficient for an adult dog, and this should be given at a time when the dog can

be left undisturbed for about an hour. With the house dog it may be most convenient to feed him after the family's midday meal. The ideal time in this case for his daily walk would be about an hour after this meal.

In nature the dog's teeth get healthy exercise, by tearing flesh and crunching bones—and this keeps them in good condition; the domesticated dog lacks this, and so must have exercise provided for his teeth. The finest thing for this is a good, raw, fresh marrow bone; poultry, fish, and small chop bones, which splinter easily, should never be given. A hard dog biscuit, the larger and harder the better, serves the same purpose; and either this or the bone, given first thing in the morning, suffices to break the dog's fast, and provide the 'tooth-brush drill' necessary for the well-being of his teeth.

An animal requires in its food proteins, carbo-hydrates, fats, mineral salts, vitamins, and also 'roughage', or fibre to aid digestion. Raw meat, the natural food of dogs, provides all these essential ingredients, beef being the best, although horse flesh from healthy animals is also excellent. Fish has not great food value, but is a useful change of diet: the flesh of a kipper will often tempt a shy feeder or a convalescent who is off his feed.

Cooking the meat destroys essential ingre-dients, especially vitamins, and so the dog should have his meat raw or at the most scalded. All his food must be wholesome and fresh, and on no account should food left over from one meal be served up again. House scraps form a useful adjunct to the dog's feed, but are not altogether a substitute for fresh meat. Highly flavoured gravies or sauces are exceedingly bad —common table salt in large quantities, for instance, is poison to a dog. Highly sweetened foods and sugar are bad for the teeth and digestion.

To supply the bulk and roughage in a dog's feed biscuit meal made from wholemeal wheat flour and manufactured by a reputable firm is suitable. A little green vegetable, which contains vitamins and mineral salts, may be added to the dog's food, provided very little salt has been used in the cooking. Potatoes are not good for dogs.

The amount of food necessary depends, of course, on the type of dog. He should be allowed as much as he can conveniently eat at a meal, but not more. The owner soon gets to know what his dog really wants. A healthy dog does not need 'condition' powders or powders sold to

encourage a dog's appetite; variety in menu and a healthy hunger stimulated by exercise are the best appetisers. Fresh, pure water, renewed frequently so that it is not warm or dusty, must be within the dog's reach at all times.

. The normal temperature of a dog in health, taken in the anus (under the tail), is 101°, with a pulse-rate of about 90 for small dogs to about 70 for large ones. But all dogs' pulses are more or less intermittent. The duration of a dog's life is somewhere about 7 to 10 years; but dogs have been known to live to 22 years or even more.

4. BREEDING AND REARING OF PUPPIES. At the age of 6 months a bitch will, normally, 'come in season' and be ready to be mated to a dog; these seasonal 'oestrums', or 'heats', in most cases recur every 6 months throughout the bitch's life, each time lasting for a period of about 3 weeks. The age of the bitch when the first 'heat' occurs and the periods between seasons vary a great deal with individuals. The period of gestation is normally 63 days. An in-whelp bitch should be well fed on rich, milk-producing foods such as milk, good rich soups, and red meat; but she must not be allowed to get at all fat. Exercise must be reduced to steady walking as soon as the bitch is at all heavy.

Bitches seldom have much difficulty in having their puppies, and should be left alone as much as possible. If a bitch has been obviously showing signs of heavy labour for over one hour without the appearance of puppies, or if she is showing signs of distress, a qualified veterinary surgeon should be called in.

The size of the litter varies, usually being about two or three with Toy Dogs, to twelve or

GROOMING A DOG AT THE R.S.P.C.A. CONVALESCENT HOME IN PUTNEY
R.S.P.C.A.

even more with dogs of the Retriever size. The puppies are born blind and remain so for about 10 days, during which period they require no care apart from that given by the mother. They are best left alone, apart from the changing of bedding, the removal of dew claws, and the docking of tails. Tail docking of those breeds for which it is the fashion should be done by an experienced person.

As soon as the eyes are open the puppies may be taught to lap, and the mother's feeding supplemented by one milk feed a day (goat's milk being much better than cow's because it contains more fat). A proprietary brand of puppy food may be used instead of milk. The feed is gradually increased as the bitch leaves the puppies more frequently and for longer periods. When the bitch, after eating her own food, runs back to the puppies and vomits some of the partially digested food before them it shows that they are ready for more solid food, and should have a little stale brown bread crumbled into the milk, and then a small feed of finely shredded, fresh, raw meat and bread crumbs in addition. After the fifth week the mother should be with the puppies only at night, and at the end of the sixth week they may be completely weaned.

The puppies should then be on five meals a day—perhaps, milk first thing in the morning, gravy and meal or brown bread at midday, meat at 4 o'clock in the afternoon, milk again at night, and a piece of biscuit or a bone at a convenient time during the day. At 10 weeks the meals can be reduced to four per day, and at 4 months to three, the quantity and richness being gradually increased at the same time. After 9 months the puppies should have one main meal with a second feed of milk until they are 12 months, when they are fully grown and developed and can go on to an ordinary adult dog's feed.

DOG SHOWS. A large number of Dog shows are held regularly throughout the country at which people may exhibit their dogs and compete for prizes. The principal ones are Crufts', Cheltenham, Birmingham, The Ladies' Kennel Association (Olympia), Bath, Taunton, Edinburgh, Richmond, Blackpool, Bournemouth, Cardiff, Chester, and Altrincham. At these shows Challenge Certificates are awarded, one for each sex; on winning three of these the dog attains the title of Champion.

Cruft's International Show, which is attended by thousands of people, is the most famous. It was launched by Charles Cruft, the son of a London jeweller, in 1891, and was held at the

JUDGING GOLDEN RETRIEVERS AT CRUFT'S DOG SHOW IN 1936
Thomas Fall

Royal Agricultural Hall, Islington. It was patronized by Queen Victoria, the Prince of Wales, and other members of the Royal Family. Cruft himself died in 1938 having set the standard of showmanship for over 50 years. Mrs. Cruft organized the 1939 event; but during the war she handed over the rights to the Kennel Club, who revived the show on 14th–15th October 1948, when it beat all its previous records for attendance.

There are several kinds of Dog shows. The Open Show is, as its name implies, open to all, but no Challenge Certificates are granted. Limited Shows are confined to members or to a district. Sanction Shows are confined to 25 classes, a 25-mile radius, and to members of that society. All these shows are licensed by the Kennel Club, and governed by their rules and regulations.

Before a dog can be entered for a show it must be registered at the Kennel Club. If the dog's parents have been registered before, the fee is 3s. 6d.; if not, the fee is 20s. If you buy a dog which is already registered, a Transfer Form, signed by the previous owner, must be sent to the Kennel Club with a fee of 5s.

Particulars of shows will be found in one of the canine weekly journals, *Our Dogs* or *The Dog World*. Entries close anything between two to four weeks before the show takes place. Entry forms must be filled up with the name of the dog, its sire and dam, date of birth, and the number of classes in which you wish to compete. It is advisable to consult a breeder in selecting the classes in which to enter your dog.

A great deal of preparation and training is needed before showing a dog. In particular, breeds such as Poodles and Terriers, which are 'trimmed', need expert attention. It is wise, therefore, to get good advice on this matter or to take your dog to an expert handler. Smooth-coated breeds are simpler; but with all dogs it takes time and care to get a good shine on the coat. Regular feeding, exercise, and training for the show ring are essential if the good points of the dog are to be shown off to the best advantage.

DOGS, TRAINING OF. The first essential in training a dog—be it only house training—is a thorough understanding of the dog's mind and its limitations. Primarily a dog is very much a creature of habit, and can be easily taught by association of ideas. This is why regularity in the times for grooming, exercise, and feeding plays a really important part in bringing up a dog. Next, all dogs have strong inborn instincts—the strength of these varying with individuals, as they do in humans, and with breeds. The carrying instinct, for instance, is possessed by practically all dogs, but is strongly developed in Retrievers and Spaniels.

That dogs have some degree of intelligence no one will deny; but a dog's reasoning powers are exceedingly limited. Some authorities say that dogs have no reasoning power—only 'dog sense', an instinct which we have not got. No animal's senses or feelings can be compared with those of human beings; but this 'dog sense', whatever it may be, comes very near to human reasoning power, although very limited in degree. A trained Retriever, for instance, having watched five birds shot in succession, will first go and fetch number three, which he has observed to be a runner, and afterwards retrieve the others in the order in which they were shot It is difficult to instil this by training alone.

Dogs have long memories, and therefore a lesson wrongly learned is exceedingly difficult to rectify; while a lesson rightly learned is not forgotten.

The whole principle of dog-training is, therefore, to make use of and develop the natural senses possessed by the dog, to direct his instincts rightly, and to build up proper association of ideas. Unless the trainer is careful the dog may make the wrong associations, and so establish a fault instead of a good habit. If, for instance, he is beaten when he comes home for going off on his own, he will associate the beating with his return home, not with his being away, and so be less willing to come home. The dog-trainer must have unlimited patience and strictest temper control. He must have a quiet manner, firm but gentle, and a quiet voice. A loud, shouting voice only bewilders a dog, and as soon as he gets bewildered he loses confidence and can learn nothing. The trainer must be fair with his dog and never deceive him—the dog should always know what to expect.

As with a child, it is never too early to begin simple lessons in regular habits, association of ideas, and discipline; but the lessons must be exceedingly simple and easily understood, no attempt being made at serious schooling until the mind is formed—perhaps at about 6 months. From the time they are first weaned puppies

can be taught regular habits by regularity in all the events of their day, such as feeding and exercise. If the puppy is put out of doors or placed on an earth tray immediately after each meal, it soon learns to associate earth with the performance of relieving itself. A trainer can do a great deal by anticipating a dog's actions because he understands what is in his mind. If the dog begins to wander round the room sniffing at various places the trainer will know that it is looking for a place in which to relieve itself, and will take it in time to the right place. As a dog's brain works comparatively slowly the trainer on the alert can generally forestall an undesired action, and so build up right rather than wrong habits without punishment.

Although constant repetition is necessary in teaching a dog, the lessons must be short, especially with puppies, for as soon as the dog's attention wanders because he is tired and bored he will learn no more, and will be less willing to learn next time. When the point of a lesson is grasped the pupil should be given plenty of praise. Sweet-voiced praise and a little fussing and patting is better, generally speaking, than a tit-bit.   c

Correction must be given very carefully, the trainer being absolutely positive that the order was understood in the first place, and that the dog understands exactly where he has gone wrong. If he has not understood, he must be carefully shown again and again. If the dog, for instance, is being taught to sit and stay in an appointed place, he must be placed on that spot, the hind-quarters gently depressed, the word of command given several times, and the hands gradually removed. When he gets up and moves away, as he is sure to at first, he must be picked up, gently scolded, and placed again on the spot, so that the lesson can be repeated; when he is in the correct position again the tone of voice changes to one of praise. Punishment is better avoided as much as possible, except for rank, premeditated, and thoroughly understood, disobedience. Punishment then well given need probably never be repeated; but the dog must clearly understand what the punishment is for, and therefore it must be given at the time and place of the offence. A beating should be administered on the dog's buttocks where it cannot injure him.

When training a dog an order must never be given unless the trainer is in a position to compel him to obey; in training gundogs at a distance a check-cord is used for this purpose. Certain words of command are needed, especially for controlling a dog at a distance, and these should be as short, clear, and unlike each other as possible. Dogs do not understand language, but they do recognize the different sounds and tones of voice. For the more distant control of gundogs and sheepdogs varied-pitch whistle calls are used: the manufactured whistles which emit notes pitched too high to be audible to humans are excellent.

It is a pity to waste time in teaching dogs useless tricks or in training them to carry out tasks which are unnatural to the breed, and which they will never do well. The capacity of an intelligent dog, well taught to do sensible things, is very delightful and makes him an entrancing companion; while the marvellous development of natural instincts shown in a well-trained Gundog, Sheepdog, or, perhaps most of all, in the Gypsy's Lurcher, is fascinating to observe.

See also PERFORMING ANIMALS.
See also Vol. II: INTELLIGENCE IN ANIMALS.
See also Vol. VI: SHEEP DOG TRIALS.

DOLLS, *see* TOYS.

DOMINOES. This game was probably invented in Italy during the 18th century, and is usually played with a set of twenty-eight black-backed pieces, originally of ebony and ivory. The white faces of these dominoes are divided by a centre line, and marked in each half with indented black dots. The highest is the 'double-six', and the lowest 'double-blank'. The dominoes are laid face downwards on the table, and the two players usually draw one each to decide who shall start the game; these are then put back, and the 'pack' is shuffled. In the commonest form of the game each player takes seven, the 'reserve' being left on the table. The players set up their dominoes so that each can see his own hand but not his opponent's. Then the winner of the draw lays his first domino face upwards, and each plays alternately, laying the pieces end to end, each matching the other's piece by laying, for instance, a four to a four, a six to a six, a blank to a blank, and so on. Double pieces are laid transversely, and allow the player an extra turn. If a player cannot match either of the end-numbers, he has to draw from the reserve, and
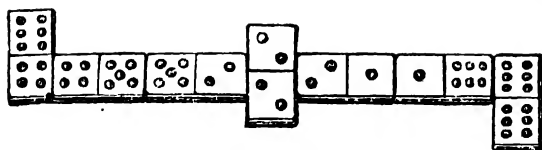
DOMINOES

his opponent has the next move. The winner is the one who first plays all his pieces. Dominoes is an especially popular game in the cafés of France and Belgium, but it is also played in many English pubs.

See also 'PUB' GAMES.

DOUBLE BASS, *see* STRING INSTRUMENTS.

DOUBLE BASSOON, *see* WOOD-WIND INSTRUMENTS.

DRAG HUNTING. In a few districts, especially near big towns where there are no foxes, or where streets and houses would prevent their being hunted, a small pack of hounds of foxhound type is kept to run a 'drag'--that is, to follow a trail of aniseed previously laid by a man running across country. This form of hunting is entirely artificial, since every detail of the line is known by the huntsman in advance. Indeed, every detail is usually known by the followers, too, for most drag hunts have only enough country to enable them to run a dozen or so different lines: so in the course of a season's hunting each line is hunted several times. Almost any sportsman would prefer the uncertainty of fox, hare, or deer hunting, even with their frequent 'bad days' of little or no sport, to the certainty of artificial sport with drag hounds; but to many people drag hunting is preferable to no hunting at all.

See also HUNTING; FOX HUNTING; DEER HUNTING; HARE HUNTING.

DRAMA FESTIVALS, *see* MUSIC AND DRAMA FESTIVALS.

DRAMA LEAGUE. The British Drama League, the headquarters of which are at 9, Fitzroy Square, London, W.C. 1, provides many varied facilities for those interested in acting and the production of plays. It has a very comprehensive Lending Library, from which single volumes and reading sets of plays

of all periods may be borrowed, and a Reference Library of books on all subjects connected with the theatre. The trained staff are qualified to give advice and help in the choice of plays, and lists of these can be supplied to suit the particular requirements of amateur societies. The Drama League will, on payment of a small fee, send an expert to amateur performances to give detailed criticism of acting and staging. Classes in acting, production, and the technical side of the theatre are held regularly, and from time to time conferences are held at which professional producers and technicians give lectures and encourage discussions. The Drama League also organizes competitive festivals of plays for amateur societies, with professional men of the theatre as judges. The organization, therefore, can be of the greatest help in many varied ways to students of the drama and the theatre.

See also MUSIC AND DRAMA FESTIVALS.

DRAUGHTS. This game has been popular in Europe since at least the 16th century. Its actual origin is unknown: it was claimed in the 17th century as a recent invention, but most authorities believe that it is very old, and attempt to trace it back to similar games played in ancient Greece, Rome, and Egypt. It is played on a squared board by two players, each of whom has twelve men, one player taking blacks, the other whites. The object of each player is to take all his opponent's men by jumping over them with his own, or to force them into positions where no move is possible. The board is arranged so that each player has a black corner square at his left hand, and he arranges his men on the 12 black squares nearest to him. Black moves first, after which the players move alternately. Moves are made diagonally on the black squares, each man moving one square forward, unless he meets an opposing man with an empty square behind him, in which case he can jump and remove his opponent's man from the board. Several pieces at a time may be taken in this way, one after another. If a player is given the opportunity to capture a piece he must do so; otherwise his opponent 'huffs' him— that is, captures his man. A man may move in a forward direction only until it reaches the opponent's back line, when it is 'crowned' with a spare piece and becomes a 'king'. As a king it is allowed to move either backwards or forwards.

Normally the game continues until one player

DUCK SHOOTERS PUTTING OUT DECOY DUCKS
These decoys or models, apparently feeding on the water, serve to attract real ducks who then come within range of the guns. *E.N.A.*

has lost all his men; but with experienced players it sometimes ends in a draw, both players having, perhaps, only one or two men each left on the board. In this case, if a player refuses the offer of a draw, his opponent may challenge him to prove that he can win inside 40 moves.

Draughts is based on simple principles which any beginner can learn in half an hour. There is, however, considerable scope for skill and calculation. The game, like chess, has its authorities and accepted practice; there are traditional opening and closing moves, traps and tricks, and recognized solutions for stock problems, for instance, how the last king may be driven out of a double corner. The best players usually base their strategy on gaining control of the middle squares of the board as early in the game as possible. The game has many variations: Polish, German, Italian, Spanish, and Turkish Draughts; there are the Losing Game, in which each player tries to lose all his men, All Kings (the name explains itself), and a number of puzzles and tricks on the draughtboard.

See also BOARD GAMES.

DRUMS, *see* PERCUSSION INSTRUMENTS.

DUCK SHOOTING. There is a vast difference between shooting duck on inland ponds and meres and shooting them on salting and shore. No unpreserved marsh will hold anything like the number which may be seen on our coastal flats: inland shooting is either a matter of collecting odd birds here and there during the day's march on a rough shoot; of surrounding artificial ponds or lakes on which birds have been reared; or of waiting for flighting duck. All these methods are included in what is called wildfowling.

Probably nine-tenths of all the duck bagged each year in the British Isles are shot on saltings. It is an arduous business as a rule. Mild, open weather is, unfortunately, hopeless for this kind of shooting: the lower the temperature and the more boisterous the wind, the more all species of wildfowl are to be seen, though they will not necessarily come within shooting distance unless the sportsman uses his wits.

Duck fly to and from their feeding grounds at dawn and dusk; so that the novice's first job is to gain a thorough knowledge of the area of his fowling. Before the gun is taken out 3 or 4 days can be well spent in studying the appearance of all conspicuous landmarks at high water and ebb tide, in noting the precise spots and times at which the various flights pass over in order to pick out the best vantage points, and in preparing beforehand alternative hides to suit changing wind and weather. There is another important reason for knowing the lie of all the creeks, the sandbanks, and mudflats, and their relative degrees of danger. Many a man, failing to note the levels of high water, has gone out to a first-rate hide, forgetful of the rising tide and the possibility of quicksands, and has found himself cut off.

When the sportsman has decided on his pitch his next problem is concealment. Natural cover, such as a 'lie' among the grasses behind sand dunes or a sea-wall, is obviously the best. When it is necessary to construct pits —as it often is— these should be no bigger than is needed to give room for sudden and easy movement. Ducks are always shy of anything unnatural, so that, if a parapet is necessary, it should harmonize with its surroundings and conform to the lie of the ground. The pit should not be so deep as to mask a man's view or restrict his gun play to front or rear; but it must be deep enough to conceal him thoroughly—for even a glint of moonlight on an upturned face or on a gun-barrel may be spotted from afar, and wild-duck (almost the keenest sighted birds that fly) will either turn away or go right up into the skies. It is as well, also, to construct alternative pits along a line of flight, for wind will often deflect on-coming birds from their usual course. Finally, the sportsman should get into position a good half hour before the earliest flight is likely to come over.

When duck shooting it is wise to wear the oldest clothes and the warmest underclothing, together with rubber thigh boots. The clothes should be as inconspicuous as possible; in snow a white overall and head covering is useful, in order to harmonize with the surroundings—for half the sportsman's success is due to camouflage. Opinions differ as to guns; but a full-choke twelve-bore. chambered for three-inch cases, can be recommended. As to shot-sizes, a good deal depends on the pattern a gun throws and on the man behind it. As a rule in duck shooting more chances and much longer shots have to be taken than in game shooting; yet wild geese have been shot with an ordinary twelve-bore and No 6 shot. Distance, pace, and the size and flight of different birds all have a bearing on the subject, and only experience can teach a man what he and his guns can do. Wind head-on to a flight will assist his cause by keeping duck low and slowing them up.

See also GAME SHOOTING; SPORTING GUNS.
See also Vol. II· DUCKS.

E

EASTER EGGS, *see* Traditional Sports and Customs.

EGG COLLECTING, *see* Bird-watching.

EISTEDDFOD, *see* Music and Drama Festivals.

ENIGMA, *see* Riddles.

ETON FOOTBALL. Several of the English public schools of old foundation have a special traditional game of their own which they play as well as Rugby or Association Football. At Eton there are two such games, the Field Game and the Wall Game. The great matches of the season in both games are played on St. Andrew's Day.

1. The Wall Game. This is the traditional game of the 70 foundation scholars ('Collegers') whose picked XI plays the pick of the remaining 1,100 ('Oppidans') in an annual match. The ground is 120 yards long but only 6 yards wide. It is bounded by a red brick wall 10 feet high, 6 yards away from which is a furrow marking the 'touch-line' (see diagram). A 10-yard area at either end of the wall is known as the Calx (Latin for 'chalk'—for the area was originally marked off with chalk). The Calx at the

THE ETON WALL GAME GROUND

southern end is called 'Good Calx' (probably because, being reached by a right-foot rather than a left-foot kick, it is slightly easier to play towards). At the other end is 'Bad Calx'. The goal at the 'Good Calx' end is a small door set in the transverse wall 6 yards outside the touch-line. The goal at the 'Bad Calx' end is an area about the same size as the door, marked on the trunk of an elm-tree. Five of the eleven players make up the 'bully' (or the 'scrum' as in Rugger), and three of these, the 'walls', are heavily padded. Of the remaining six, three are 'outsides' and three 'behinds'.

The object of each side is to force the ball into their opponents' Calx. Ground towards the Calx can be gained, as in Rugger, by kicking the ball outside the touch-line. If, for instance, the side playing towards Good Calx kicks the ball to the point A on the diagram where it is recovered by an opponent, the ensuing bully is held opposite this point at B, instead of at C, opposite the point where the ball crossed the touch-line, as it would be in Rugger. Once the ball has been forced into the Calx, players may 'furk' (heel the ball backwards); and if, in the ensuing desperate but highly scientific struggle, an attacker can prop the ball off the ground against the wall with his leg and then touch it with his hand, he appeals 'Got it', and scores a 'shy'. This counts one point and allows him a 'shy' at the goal. In fact, the target being so small, a goal (10 points) is very rarely scored—none having been scored in the St. Andrew's Day match for a period of over 40 years.

2. Field Game. This is the fastest and most spectacular of the 'one school' traditional football games. The field is the size of a soccer ground, but the ball and goals are much smaller. The game is half-way between soccer and rugger, with a scrum ('bully'), no handling, and no passing. There are eight bully players, of whom four do the hard shoving, three (called 'corners') stay on the fringe of the bully ready to break away with the ball, and one (called 'fly') stands behind the bully as spearhead of the attack and first line of the defence. The three 'behinds' send up long, high kicks for the bully to 'charge up'. A 'rouge' (1 point) is scored when the ball goes over the back line off a defender and is touched down by an attacker. It may be converted ('forced') by the 'ram' of four attackers driving it through the defenders into the goal
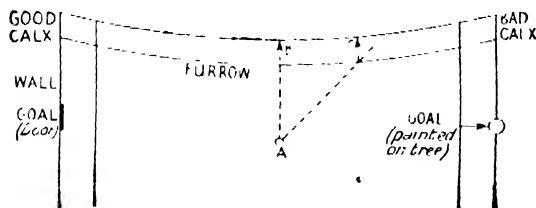
THE ETON WALL GAME PLAYED ON ST. ANDREW'S DAY, 1948
A bully is taking place. *Sport and General*

mouth. A 'forced rouge' counts 2 points and a shot goal 3 points.

A peculiar feature is the play 'on the line', when the attackers try to force the ball over off a defender, and the defence try to outwit them. As there is no passing, the game depends on individual brilliance and on close backing-up, and its excitement on the long, accurate kicking of the small ball by the behinds, and the head-long, dribbling rushes by the bully.

See also HARROW FOOTBALL; WINCHESTER FOOTBALL.

EUPHONIUM, *see* BRASS INSTRUMENTS.

EXHIBITIONS, *see* WAXWORKS.   *See also* VOL. VII.

F

FAIRS. Three English words owe their origin to fairs—'troy-weight', 'fairings', and 'tawdry'. 'Troy-weight' comes from the great fair of Troyes in France, which from the days of Charlemagne was one of the most important trading occasions in Europe, and whose system of weights was adopted in England in the 14th century. The word 'fairing', on the other hand, reminds us of the social value rather than the great trading importance of the fairs. A 'fairing', like Johnny's bunch of blue ribbons, was a present bought at the fair for a friend. The third word, 'tawdry', implies the decline of the fairs as trading centres. It comes to the language from tawdry lace, a kind of lace necktie sold at the fair of Ely. The patron saint of Ely, Saint Etheldreda or Audrey, was said to have died of a throat disease which she regarded as a punishment for vanity in her youth—and particularly for wearing splendid valuable necklets. In remembrance of her the women of Ely wore simple lace necklets bought at the fair. The word 'tawdry' no longer signifies this kind of lace, but anything flashy and cheap, ostentatious

A COUNTRY FAIR
From W. H. Ryne, *Costume of Great Britain*, 1808

but worthless; and in the days of decline, fairs became notorious for 'tawdry' bargains—the gross of green spectacles brought home by Moses in *The Vicar of Wakefield*, for example.

In the Middle Ages most of the trade of Europe was conducted through fairs: the fairs of Leipzig, Aix-la-Chapelle, Champagne, and Brie were attended by traders from all over Europe who bought and sold agricultural products and manufactured goods such as Italian silk, Spanish leather, and Burgundy cloth (*see* TRADE FAIRS, Vol. VII).

In England the internal trade of the country depended mainly on the fairs and on WAKES (q.v.), the fairs differing from the wakes in that they were held by royal charter granted by the king to noblemen, churchmen, or town. This was a source of revenue to the holders, who received rent for all the sites in the fairs. Sometimes the holder of the charter had to pay something to the King for the privilege; for example, the town of Cambridge paid to Edward VI 1,000 marks for the holding of Stourbridge Fair. The charter for Winchester Fair, on the other hand, was granted to the Bishop in 1079 in order to provide him with revenue for the rebuilding of Winchester Cathedral and Monastery. Fairs had another important feature which did not belong to wakes. From the earliest days of the Norman Kings—and perhaps before— a court of justice was held during a fair on the fair ground. It was called Piepowder (or 'dusty foot') Court and the justices of the town in which the fair was held presided, deciding trading disputes and punishing offenders. There was no appeal from this court. From the 11th century till the 17th century the fairs were attended by great concourses of people for trade and for amusement.

The greatest of all the fairs of England, Sturbridge Fair, held near Cambridge in September, was 'called' for the last time in 1855. The charter of this fair was granted by King John in 1211. It took place yearly, being cancelled only in plague years, and was attended by traders from all over England. Daniel DEFOE (q.v. Vol. V). who visited it in 1723, gives in *A Tour through the Island of Great Britain* a lively and detailed account of its extent and importance; of the streets of booths for retail traders—goldsmiths, toyshops, milliners, and drapers, the street for wholesale dealers, and the great square called the Duddery, for wholesale dealers in woollen manufactured goods. He reported that £100,000 worth

THE FROST FAIR ON THE THAMES, FEBRUARY 1814
From a contemporary wood-cut

of goods were sold for cash in this square in one week, besides the immense amount of business transacted in orders. This was the main fair in England for the sale of hops, even though the hops were grown mainly in Kent and Surrey. The hops were brought to the fair from London by water, and were then shipped to all parts of England— to Hull, York, Newcastle, and even to Scotland. It was also one of the main fairs for selling wool. Defoe describes, too, the amusements to which attention turned after the serious business of the fair, the PUPPET-SHOWS, CLOWNS and ACROBATS, the HORSE-RACES (qq.v.), and toy-shops. • The fair was very well ordered, the Court of Justice deciding any controversies that arose.   .

Rahere, who had been court jester to Henry I, founded the monastery and hospital of St. Bartholomew in 1123, and became its first prior. To him Henry granted the charter for a fair, which from the first attracted great numbers of visitors who came as pilgrims as well as traders.

After the dissolution of the monasteries in 1538, the City of London became 'owners' of the fair. Ben Jonson in his play *Bartholomew Fair* (1614) describes the riotous fun, the eating and drinking, the plays and puppets, the pickpockets, and acrobats of the great fair. It was always a centre for dramatic art. In the 14th century MIRACLE PLAYS (q.v. Vol. XII) were performed there. In the 18th century stars from Drury Lane Theatre, Covent Garden, and the Haymarket performed there. Gay's *Beggar's Opera* was played there in the year it appeared, 1728. A special feature of the fair was the presentation of topical satires, and sometimes the players who satirized the government or the navy scored too great a public success, and the show was stopped.

There is one kind of fair which was never for trading, but purely for amusement, and was not held annually. Frost Fairs have been held about half a dozen times since the 16th century—on the river Thames, in those fantastic winters of 1564, 1608, 1684, 1739-40, 1788-9, 1813-14,

THE FAIR AT PINNER, MIDDLESEX, MAY 1948
This fair has been held since 1338. Now, the commercial side has died out, leaving only the fun fair
Sport and General

when the river froze so deeply that it provided a great glittering playground. Large numbers of booths were set up, ornamented with streamers and flags. Swings, bookstalls, skittle-alleys, printing presses, stalls to provide drinks and food appeared overnight, and London thronged there to make merry till the thaw. The diversions of the Frost Fairs owed much to St. Bartholomew's Fair.

As time went on the amusement side of the fairs gradually came to be more important than the trading, and the amusement often became rather rowdy. This was particularly true of the great London fairs such as St. Bartholomew's and Southwark. In consequence, the Puritans in the 17th century made a prolonged attack on the fairs. In 1762 Southwark Fair was abolished by an order of the Court of Common Council, and in 1764 May Fair—another great London fair (which has given its name to the district near Piccadilly)—was also closed. Bar-

tholomew Fair survived until 1855. In 1843 the City authorities, alarmed at the extent and riotousness of the Fair, prohibited all side-shows. The trading remnant of the fair, divorced from its more vital part—the jugglers, menageries, wonders, and side-shows of all kinds, the puppets, the plays, and 'all the fun of the fair'—survived for 12 short years, and died. In 1871 what is usually called The Fairs Act came into being. It decreed that 'certain of the Fairs held in England and Wales are unnecessary, are the cause of grievous immorality, and are very injurious to the inhabitants of the towns in which such Fairs are held, and it is expedient to make provision to facilitate the abolition of such Fairs ...'. The Act authorized the Secretary of State, on repre-sentation of magistrates with consent of the holder of the charter, to order fairs to be abolished. Nevertheless, many of the ancient fairs of England survived even this harsh accusa-tion that their use for trade was over, and their

BOAT-RACE FROM THE ENGLI PALACE TO THE RIALTO, VENICE

Painting by Canaletto (1697-1768)

fun too fast and furious. In the Midlands and the North country, particularly, century-old fairs draw great crowds. Barnet and Mitcham St. Giles's Fair (Oxford), Nottingham Fair, Stratford-on-Avon Mop, and many others, still mean fairs and fun and fairings to thousands of folk.

All the paraphernalia of a modern fair is carried in vans and on trailers from fairground to fairground. The day before the fair the show-men arrive to set up their roundabouts and stalls, the booths for special shows of freaks and for gypsy fortune-tellers, side-shows for coco-nut shies, rifle ranges, and so on. Their arrival in a district for the holding of a large fair, such as that of St. Giles's in Oxford, often leads to other smaller fairs in the outlying districts.

The roundabout or merry-go-round, a particular feature of the modern fair, appeared first in the 18th century in the form of a slowly-revolving platform of wooden horses, a man turning a capstan in the centre. In the 19th century the speed was increased by harnessing a steam-engine to the capstan, and soon a steam organ was also introduced, driven by the same engine. Grotesquely carved ostriches, turkeys, cockerels, and later, bicycles, cars, and aeroplanes were added to the horses, revolving in row upon row and joined by a crankshaft so that alternate rows moved up and down with a galloping motion. Further exciting varieties were added. Among these were the 'Flying Chairs' which swing out on chains from a revolving pole, only the speed keeping the people in their seats, and the 'Switchback', at first called 'Montagnes Russes', probably because of the Russian custom of building imitation hills in the towns in winter for tobogganing. These complicated machines, with all their elaborate ornamentation, can be packed in the showmen's vans and set up or taken down overnight.

In certain places, especially at holiday centres, such as Blackpool in Lancashire, Coney Island in New York, and the Tivoli gardens in Copenhagen, permanent fairgrounds have been set up. Here the roundabouts and switchbacks, being permanent, are still more elaborate, and erections are set up such as 'Scenic Railways' which carry passengers through groves of cardboard scenery in a miniature train, and courses for electrically driven 'Dodge 'em cars' in which the drivers try to dodge one another in a confined space. Slot-machines provide a new kind of penny-catching entertainment; these serve chocolate and cigarettes, tell fortunes, or give little shows. They are to be found, along with pin-tables, rifle ranges, and so on, on all permanent fairgrounds, as well as in special arcades in many big towns.

FALCONRY is the art of training and flying birds of prey for the purpose of catching wild quarry, and is one of the oldest sports in the world. In western Europe it has been traced as far back as the 4th century; but in China it appears to have been practised as early as 2000 B.C., and we are told that amongst the ruins of Khorsabad in Mesopotamia was discovered a bas relief, dated about 1200 B.C. or earlier, which represented a falconer bearing a hawk on his wrist. In England falconry seems to have become a royal sport by the middle of the 8th century; for we learn that Ethelbert, King of Kent, requested the Archbishop of Mons (or Mayence) to send him two falcons trained to take cranes. In the succeeding century the sport was held in high esteem by the Anglo-Saxon nobility, the training and flying of hawks being part of the education of all young men of noble rank. Alfred the Great is said to have been an enthusiastic falconer. In the 13th century Crusaders returning from the East brought with them new methods of training and flying hawks learnt from oriental falconers. When his Army invaded France, Edward III had with him thirty falconers in charge of his array of hawks, and he went hawking almost every day.

From the 13th until the 17th century falconry flourished in Europe not only as a sport but also as a way of providing food; and people of all classes got pleasure from it. Whilst the earl delighted in the sight of his favourite haggard 'waiting-on' at a vast height or 'stooping' in head-

aua ttaurres:memdtrarrumluu'

FALCONRY IN THE 14TH CENTURY
Marginal drawing from Queen Mary's Psalter
Brit. Mus Roy. MS. 2B. vii (*c.* 1300)

long rush from the clouds, the humble yeoman would be getting just as much fun—and a much bigger bag—with the help of his bloodthirsty goshawk. Ladies also took part in falconry. One writer tells how they often went into the field without any male companions, and that they even excelled the men in the knowledge and exercise of falconry.

The advent of the gun practically sealed the fate of falconry, for it was obviously simpler, and much less expensive, to keep a gun than a whole collection of hawks, which had to be attended to by falconers and exercised every day if they were to give a first-rate performance. By the close of the 17th century falconry had become almost unknown—not quite, however, for the sport has managed to survive even until to-day. There are still those who keep trained hawks and who, in most cases, do as well with them as did the falconers of old.

Hawking birds are, generally speaking, divided into two groups: the long-winged, dark-eyed falcons, which include such birds as peregrines, kestrels, merlins, and hobbies, and the short-winged yellow-eyed hawks, such as the goshawk and the sparrow-hawk. The particular bird, whether falcon or hawk, will either be an 'eyas' (a young bird from the nest, brought to maturity under the care of the falconer and then trained), or a 'haggard' (a hawk caught in the mature wild state). The falcon or female is usually preferred to the 'tiercel' or male, because she is larger.

The method of training a hawk (and whether falcons or true hawks such birds are loosely referred to as 'hawks') is much the same whether the pupil be an eyas or a haggard. The bird must be made accustomed to feeding on the gloved hand (or 'fist' as falconers term it). She may be trained in a darkened room, where she will be less nervous than in the open. Then, when she is more confident, she must be encouraged to feed in daylight, and, by being carried about on the gloved fist, to overcome her fear of such terrors as dogs and motor-cars. She must then be induced to fly from some gate or post and with a light line attached to her 'jesses' (light straps fastened round her legs), back to her owner's hand, or to a 'lure' (a rough imitation of the hawk's natural quarry) thrown out on a string.

Daily flights to the lure having become a habit, the line may be dispensed with, and the hawk will behave as confidently as she did when on a line. She must, of course, always be allowed to enjoy a good meal when she has seized the lure. In a few days she will eagerly return from quite long distances whenever the lure is displayed. Falcons can, at this stage, be brought into really fine flying order by a bout of 'stooping to the lure' every day. The lure is produced when the pupil is at a distance, say 100 yards or so, and swung in a perpendicular circle as the bird approaches. When she is some 25 feet away, the lure is swung towards her—almost into her face—and rapidly drawn back, eluding her as she strikes at it with her foot. It is twirled aside as she shoots forward and upwards. She turns, and comes back at it with all possible speed, being again within an ace of grabbing (or 'trussing') it. Two or three such efforts will be enough for a beginner and will probably result in a half-open beak and much rapid breathing. But soon she may be putting in fifteen or twenty consecutive stoops without pitching or showing signs of undue distress. And when in first-rate flying order, it will be the falconer's arm that will be aching while she is still enjoying the exercise—doing her fiftieth or sixtieth stoop! (Sparrow-hawks and goshawks cannot be persuaded to stoop to the lure. They rely on sudden acceleration, and do not indulge in the aerial acrobatics at which the falcons excel.)

On reaching this state of perfection, the bird may be 'entered' to the sort of quarry intended for her. A peregrine that is required to fly rooks should not be allowed to kill anything smaller as her first blood. She will probably fly a pigeon or partridge straight away, but rooks are much a less attractive prey, and the trained bird can sometimes only be induced to fly them after much patient encouragement. A dead rook may be thrown up by a hidden assistant some distance away and the falcon induced to stoop at and eventually 'foot' or seize it. Many falconers of old would never allow their hawks to eat the flesh of rooks or crows, but substituted a dead pigeon or other such delicacy under the wing of the victim in the hope that the falcon would be deceived and would ever after fly rooks with gusto. In fact, however, the majority of peregrines seem to enjoy rook's flesh as much as that of other birds.

Now the falcon—hooded to prevent her wasting her strength and injuring her precious feathers in her frantic efforts to get on the wing—may be taken out to some open country where

a rook is likely to be found. When one of these weary birds is sighted, the falconer loosens the braces at the back of the hood and approaches it as unostentatiously as possible. When the rook rises, the falcon is unhooded and cast off. Instantly the rook strikes the air with stronger wing-beats and surges forward at an astonishing speed. Now comes the test of the falcon's training. She may ignore the rook entirely; or she may follow it in great wide sweeps high into the sky where, having at last got the better elevation, she turns over and puts in her first stoop at a live rook. She may kill it: if she does so, she is made.

Merlins destined to fly starlings may have to be encouraged in the same sort of way as the peregrine at rooks, by any trick, in fact, which will make them believe that the chosen quarry is desirable and can be brought down.

The training of a peregrine for game-hawking follows quite different lines. Since the hawk, if flown from the fist, would have no chance of getting up enough speed to overtake any grouse or partridges that might be put up, she must be encouraged to 'wait-on' (to wait obediently overhead) and to do so at as great a height as she will attain. The greater the height, the faster will be her stoop. Some peregrines wait-on instinctively and, after much practice, at vast heights. Others refuse to go up at all. When game-hawking, it is usual to employ a setter or pointer so that, when game has been located, the falcon or tiercel can be unhooded and cast off, the game not being flushed until the hawk has reached her pitch. To see a falcon, at first almost invisible in the sky, turn over to stoop; to see the breath-taking earthwards rush; to see her flatten out and overtake the grouse or partridges, hitting her prey such a blow with her sharp hind-talon that it tumbles head over tail, stone dead —is to see game-hawking at its best.

Short-winged hawks do not need entering: they will fly readily enough when in proper condition, but will not wait-on. The hawk is taken out unhooded and is allowed to fly at anything it fancies. It is a matter of hit-or-miss. Kestrels and hobbies are not important hawking birds, for the former are slow of flight and lack persistence, while the latter are rare and nest very late in the season. Eagles of various kinds have been trained for falconry in different parts of the world. In England one species has taken, amongst other victims, many hares, rabbits, and

FALCON
Painting by A. Gryef 1670-1715
National Gallery

pheasants. This eagle takes no exception to being hooded, and comes well to the lure or fist, acquitting himself best when he starts from a high-up bough of a tall tree, because of the impetus he gains by the drop. Unfortunately he will not wait-on.

See also Vol. II: FALCONS; HAWKS; EAGLES.

FASTNET RACE, *see* OCEAN RACING.

FENCING is as old as duelling, which itself is as old as the sword. But neatness and skill in the use of the weapon date only from the time when the wearing of heavy armour went out of fashion and sword-play came into its own. The modern sport of fencing is very complicated. In competitive fencing three types of weapon are used: the foil, which takes the place of the rapier, the épée (sword), and the sabre. With the first

two, only touches made with the point are counted in combat; with the sabre (which corresponds to the cavalry sword) touches may be made either with the point or with the cutting edge of the blade. In foil-fencing a point is scored only by touching the trunk of the body, but with the épée a touch on any part of the opponent scores. The rules of épée-fencing are based on the old duelling code, and for that reason, originally, the first man to score a touch won, just as in duelling the first to draw blood was the conqueror. To-day, under the international rules, combats are of three touches up, a simultaneous hit being counted against both fencers. With both foil and sabre (with which touches score on the trunk, arms, and head) five touches win a match.

Foil-fencing, the most difficult of the three forms, is the foundation upon which all-round skill is based. The foil itself is a thrusting weapon, with blade an inch or two less than a yard long. In the French school the weapon is gripped with the thumb fully extended along the top of the handle and the curved forefinger, both practically touching the guard. The other fingers fold over the handle, supporting the thumb and the first finger which do the manipulation in passing and directing the point (Fig. 1). The fencer wears a white canvas jacket and either a pair of white flannel trousers or a pair of breeches made of the same material as his jacket.
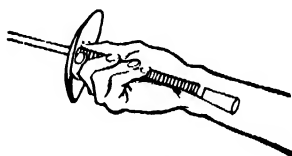
The Assault, as a formal contest is called, takes place on a platform 40 feet long by 6 feet wide. From the 'on guard' position (Fig. 2a) the fencer moves into the attack. The guard and the lunge are the two fundamental positions in the sport. The lunge, the attacking posture, is made with the right arm extended to its full length, the right leg flung forward with the knee bent, the left leg straightened, and the left arm dropped backward and fully extended with the hand open and the thumb uppermost (Fig. 2b). Before changing from the guard to the lunge, the attacker must get within attacking distance. There are two ways of advancing, by the regular step, or by the jump. The former, which is the easier, consists in sliding first the right foot, then

THE GRIP
FIG. 1.

ON GUARD   THE LUNGE
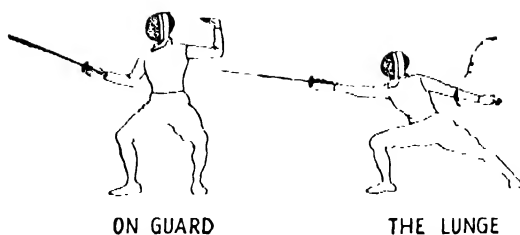
FIG. 2 a and b. From Léon Bertrand, *The Fencer's Companion*
Gale and Polden

the left forward in the direct line, the body remaining in the position of the guard.

There are eight fencing positions which form the basis for the parries (Fig. 3). 'Prime' protects the high and inside lines of the target area; the point is held lower than the hand. 'Seconde' protects the low and outside lines; the hand is to the right, the point once again low. 'Tierce' protects the high and outside lines; the hand is held to the right, with the point above the hand. 'Quarte' protects the high and inside lines; the hand is to the left, the point, again, carried high. 'Quinte' protects the inside and low lines; the hand is to the left, the point slightly above the hand. 'Sixte' protects the outside and high lines; the hand is to the right, the point above the hand. 'Septime' protects the low and inside lines; the hand is to the left; the point held below it. Finally, 'octave' protects the low and outside lines; the hand is to the right, the point once again below. The difference between seconde and octave, which both protect the outside and low lines, and between tierce and sixte which cover the high and outside lines, is in the grip in which the foil is held. Prime, seconde, tierce, and quinte are parries made with the hand in 'pronation'—with the knuckles on top; quarte, sixte, septime, and octave are made with the hand in 'supination'—with the fingers uppermost.

The complications of attack—the direct thrust, the riposte (the equivalent of counter-punching in BOXING (q.v.)), the feints, the false attacks (simple or compound), stop-thrusts, redoubles, reprises, and remises, and innumerable other factors in offensive action—all these can only be understood by watching and taking part in actual bouts.

The history of scientific fencing is long and interesting. It began in Germany, where swordsmen formed themselves into guilds as early as the 15th century—among them the famous

| PRIME | SECONDE | TIERCE | QUARTE |

| QUINTE | SIXTE | SEPTIME | OCTAVE |
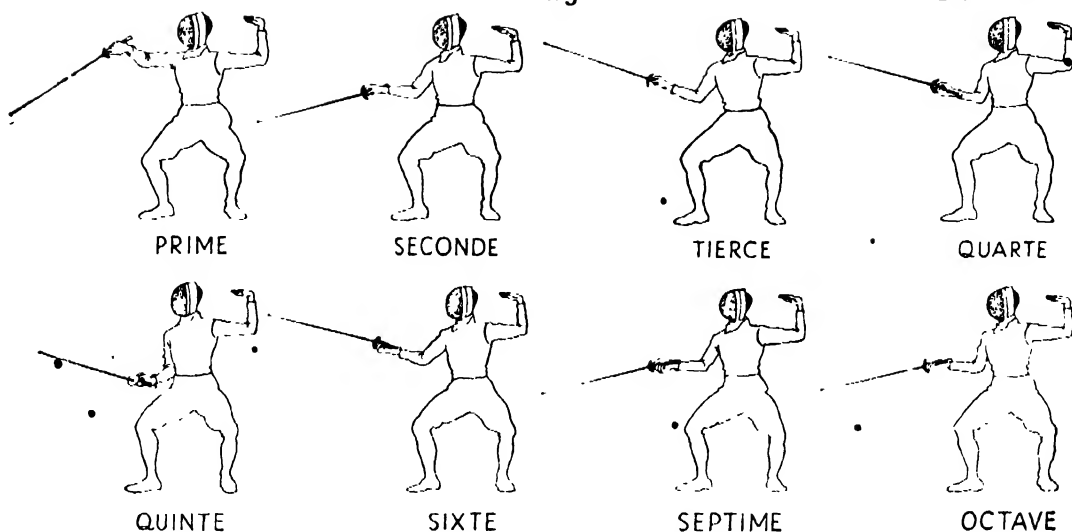
FIG. 3. THE EIGHT POSITIONS IN FENCING
From Léon Bertrand, *The Fencer's Companion. Gale and Polden*

Marxbrüder of Frankfurt. The earliest text-books on all the cruder forms of sword fighting were written at that time. Diego de Valera's *Treatise of Arms*, written towards the end of the 15th century, was the first Spanish text-book to appear. In the 16th century we find fencing well established in Spain and also widely taught in the northern universities of Italy to which scholars flocked from every corner of Europe.

In England, as far back as 1285, Edward I had enacted a law prohibiting fencing schools as leading to duelling. In Henry VIII's reign, fencing returned to royal favour, and the sword-play became more refined. A Royal Charter was given in 1540 to the 'Maisters of the Science of Defence and other Provosts of the same Science'—who thus became the earliest society of sportsmen to be incorporated in this country. But the native sword and buckler play was only slowly superseded in England by the combat in the Italian fashion with rapier and dagger. To-day the French school is in vogue in England and in the United States. Its technique dates from the reign of Louis XIV, when the short sword replaced the longer, wide-hilted rapier. The Italian school is still the more widely followed in central Europe.

Before the Second World War the Salle Bertrand (named after the fencer Léon Bertrand) was the headquarters of the sport in England. To-day the headquarters is the London Fencing Club. In France it used to be no uncommon thing to find crowds of 7,000 thronging the Cirque de Paris to watch fencing; but English crowds, particularly alive to the thrill of duelling between champions in the much more rugged sport of boxing, have yet to recognize the charm and excitement which fencing offers them.

See also SINGLE-STICK.

FERRETING. The ferret is a kind of WEASEL (q.v. Vol. II)—either a domestic albino variety of polecat or a descendant of a wild weasel originating in Africa. Its name is probably a corruption of its Latin name *viverra*. It is about 14 inches long with a 5-inch tail—rather smaller than the wild polecat. It has cream-coloured fur and pink eyes. Although it may be quite tame, it can never be trusted not to bite ferociously, particularly if it has tasted blood. In contrast to most weasels it is delicate and cannot stand cold.

Ferrets have been bred since very early days, being probably first used to catch mice and rats before the advent of the domestic cat. They are mentioned by Aristotle and by several Roman writers: Pliny, for instance, writes of rabbit-hunting with ferrets. They are now used principally against rats and rabbits: a ferret will tackle a large rat with undaunted courage. When rabbiting, the ferret is put down a hole to drive the rabbits out of the warren. The other holes are netted so that the rabbit is caught, or

FERRETING IN THE MIDDLE AGES
Marginal drawing from Queen Mary's Psalter
Brit. Mus. Roy. MS. 2B. VII (*c.* 1300)

perhaps shot, as it tries to escape. The ferret is generally muzzled to prevent its killing and eating too many rabbits in the warren. If it is allowed in unmuzzled, having gorged itself to the full, it may go to sleep in the warren instead of coming out, and it may be several days before hunger will bring it up. It is sometimes belled so that it can be heard when underground, and it is also often attached to a string, so that it can be pulled out when it has done its work.

FESTIVALS, *see* HOLIDAYS; MUSIC AND DRAMA FESTIVALS; TRADITIONAL SPORTS AND CUSTOMS. *See also* Vol. I: FESTIVALS.

FIFE, *see* WOOD-WIND INSTRUMENTS.

FILMS. The number of ways of telling a story are very few. It may be mimed in ballet or dumb-show, acted in a theatre, spoken in words by poet or narrator, or written by a novelist. The invention of CINEMATOGRAPHY (q.v.), the medium of the motion picture, later accompanied by sound and photographed in colour, added a new medium of narrative to the few which had been practised for so many centuries. Like each of the older arts, it developed a technique of its own to make its stories effective and to entertain its audiences.

The film achieves its effect by means of moving pictures accompanied by music, natural sounds, and human speech. It is similar to the novel in the comparative freedom with which it can tell its story, moving about in space and time to suit the narrator's sense of situation and sense of climax. It is similar to the drama because it is played before an assembled audience, which normally limits its length, and because actors are used to interpret the story. It is different from the novel, however, because it has to show, rather than describe, its scenes and characters—if it enters into the psychological complications of character, it must show them in pictorial form: it cannot hold up the action to analyse motives as a novel can. It is different also from the drama because it is not limited to a small number of scenes changed behind a lowered curtain and viewed from a fixed distance in the auditorium. Nor does it depend for its main effect on the dramatic power of the spoken word. The plays of great dramatists can be read and enjoyed as great literature; but a film cannot be judged by the mere description of its action and the record of dialogue as it is put down on a film script; a film only comes to life as an exciting form of narrative when it is seen on the screen by an audience.

These comparisons enable us to see something of the unique qualities of a film and its complicated technique. It is made up of some hundreds of very short scenes or views of the action. These shots, which in silent days had to be clumsily punctuated by printed titles, giving the dialogue taking place between the characters, are now accompanied by a sound-track, which records speech and other sounds. The camera which records these selected views can be moved smoothly in any direction, following an actor across a room, moving in from a general view of the action to emphasize in close-up some significant detail. It can dwell on small objects, the smoking cigarette, the tossing of a coin, the watching eyes. It can show by contrast the great expanse of plains, the peaks of mountains, and the drift of clouds. The film director can use the camera to show in rapid succession people or objects from any distance or angle.

Films take long periods of time to make (sometimes months, sometimes years) because of the considerable staff work which goes to the preparation and building of numerous and often extensive 'sets', the rehearsal of large casts, and the difficult technical adjustments required if a high standard of photographic quality and of sound-recording is to be achieved. All films pass through three main stages: the stage of 'Scripting'—the preparation on paper, involving design and working drawings; and all the vast work of preliminary organization; the 'Shooting' stage, when scene by scene is recorded with camera and microphone; and the 'Editing' stage, when all the various parts are blended into one final

whole. Many specialists have therefore arisen in the various branches of filmcraft: producers, who specialize in studio supervision, policy, and money matters; script-writers who work on the dialogue and the presentation of the action; directors, who supervise the shooting of the individual scenes; art directors, who design and construct the sets and properties and supervise the costumes; directors of photography, who control the lighting and camera work; sound-recordists who create the sound-track; and editors, who assemble the film in its final form (see FILMS, PRODUCTION OF).

With all these technical complications and the large financial commitments they represent, it might seem impossible for the artist—the poet, painter, or dramatist—to survive in the film studio. But each art inspires its own artists who are as much excited by the task of overcoming its difficulties as they are inspired by its possibilities as a medium of expression. Many films,

of course, like many novels and plays, are made by those who are not artists, and, in consequence, are either mediocre or really bad. Already, however, in the brief history of the cinema, a number of film artists have already emerged. Their work has been by no means always perfect; but enough of it has been distinguished to make them the first artists, major and minor, of the cinema. Such are D. W. Griffith, Charlie CHAPLIN (q.v. Vol. V), Walt Disney, and John Ford in America; Fritz Lang in Germany; Anthony Asquith and Alfred Hitchcock in Britain; René Clair and Jean Renoir in France; Eisenstein and Pudovkin in Russia; and, as producers and directors of documentary films, Robert Flaherty, John Grierson, and Paul Rotha (see FILMS, DOCUMENTARY). Almost all these men have supervised every branch and process of their films from scripting to editing—a degree of power not normally allowed in the Hollywood studio.

No art can exploit all its technical possibilities

A SHOT FROM ALFRED HITCHCOCK'S 'BLACKMAIL', 1929
A sinister effect is produced by the skilful use of lighting
A.B.P.C.

A SCENE FROM THE FILM 'THE FALLEN IDOL', 1948
The boy playing hide-and-seek crouches under the table, and the tilt of the camera emphasizes the distorted angle from which he sees the room. *London Films*

all the time. Although the film is the art of the motion picture, it does not follow that every shot must contain the maximum amount of movement, although some films of the simpler type such as slap-stick comedies and Westerns quite rightly depend on continuous movement for much of their effect. Similarly, although the main part of our attention is devoted to watching a film, it does not follow that the dialogue should not be significant to situation and character. On the other hand, it is a bad film technically which has little or no movement in its scenes and is composed mainly of dialogue. There are many films made like this; often they are simply photographed plays, inadequately transformed from the exciting medium of the theatre to the equally exciting but very different medium of the cinema. Novels and plays must necessarily be transformed technically when adapted for the screen. No one is entitled to object to this, though we have every right to complain when

the original theme and characters are altered to please what is said to be the taste of the majority of cinema-goers.

However, an examination of the work produced by the directors mentioned above, and of others who have served and are serving the screen, shows that the true artist of the cinema must have a visually sensitive imagination to be able to choose the correct detail as well as the correct moment of action to make his story effective—the electric lamp knocked into a swinging movement over the still body of the murdered man, the eyes of the person who is listening intently to the voice which we hear on the sound-track, the little gesture which betrays a moment of fear, the large empty room with the lonely dwarfed figure seen from high above, the whispered phrase which accompanies the face in shadow, the play of light and shade as the door moves and creaks, the burst of music which rises with a rhythm emphasizing the galloping of

horsemen across the screen. He must understand the power at his disposal in the rhythm of movement in the film—Disney's great fantastic bats which swoop from background into foreground, the ships that sail through the moonlit shaft across the sea, the arm that descends, or the man who falls and lies still. He must understand the excitement of image swiftly following image as the story builds to a climax, and the long, slow tension possible when a climax is held back and the attention forced to dwell on stillness till the sudden start of action. He must be sensitive to rhythm, movement, timing, distance, details, and perhaps especially, light and shade, the significances of colour and lack of colour. He must be able to photograph the human face and body to the best advantage. Also he must have a sense of the selective use of sound (speech, noises, music) and of silence. The great film artist discovers and uses all these resources in developing the particular technique of the film—this new medium, the product of our own time—for the time-old purpose of telling a story.

See also CINEMA, HISTORY OF.

FILMS, ANIMATED. An animated film, or cartoon, tells a story in the same way as an ordinary film except that drawings take the place of living characters and real scenery. The principle involved is precisely the same as that of other films; but instead of the movements of the live actors being recorded direct by the cine-camera, the movements of the characters in the cartoons are drawn, each drawing showing a slight advance on the movement of the one before. These drawings are each photographed separately on cine-film, and when they are projected at the correct speed, the characters seem to move and come alive. Every smallest movement is represented by a great many separate drawings.

Many of the characters in film cartoons have become as famous as living screen-stars, among them Felix the Cat, Popeye the Sailor, and, of course, the Walt Disney characters—Mickey Mouse, Donald Duck, Pluto, and so on. Walt Disney has made the greatest contribution to this kind of film, for although film cartoons existed before his time (the very first types of moving pictures were drawn by hand) the history of the development of modern animated cartoons is practically identical with the story of his work. Although cartoon films are used a good

deal in educational and scientific work, they are most important as entertainment, the Walt Disney cartoons being the most famous of all.

In 1923, at the age of 22, Disney founded his own studio and started to make his *Alice in Cartoonland* series with a live Alice in a world of drawings. His first cartoon character was Oswald the Rabbit. By 1928 he was working on the first series of Mickey Mouse pictures. These he held back so that they could be synchronized with sound—for Disney saw that the coming of the talking film would be of the greatest importance to his work. *Steamboat Willie*, his first Mickey Mouse picture with sound, was released with great success in September 1928.

Disney's skill and reputation grew, but so did his costs. A company, therefore, was founded called Disney Enterprises which produced books, toys, and advertisement strips based on the Disney characters to make money for the production of cartoon films. New animal characters were added to the repertoire, such as Pluto the Pup, Goofy, and Donald Duck. *The Silly Symphonies*, a series of films in which special use was made of the sound-track, appeared in 1929, the first of these being *Skeleton Dance*. For this film Disney used Saint-Saëns's *Danse Macabre*, showing his sense of the importance even to cartoon films of music of high quality. In spite of the increasing costs, Disney used Technicolor as early as 1931, when he made *Flowers and Trees*, the first Silly Symphony in colour. A great deal of Disney's success lay in his ability to make his animal stories into allegories reflecting the social feelings of his period, and to create animals whose near-human characteristics could bring the story close to real life besides making it funny. With the appearance of *The Three Little Pigs* who fought the economic depression of the early thirties in the symbolic form of the Big Bad Wolf, the Silly Symphonies became world-famous.

After a period of great success with the Silly Symphony and Mickey Mouse films, Disney produced a brilliant series of full-length cartoons—*Snow White and the Seven Dwarfs, Pinocchio, Bambi,* and *Dumbo.* Although the later full-length pictures, *Fantasia, The Three Caballeros,* and *Make Mine Music* contain many flashes of Disney's old imagination and elements of considerable artistic power, they are in parts over-pretentious, and at times spoilt by sentimentality and crude draughtsmanship.

In 1928 Disney was employing a staff of only

A BACKGROUND ARTIST PAINTING A SCENE FOR THE WALT
DISNEY ANIMATED FILM, 'MELODY TIME'. *Walt Disney*

twenty-five. This grew rapidly during the early thirties as Disney Enterprises supplied more money and the use of colour and sound made greater technical demands. The Studio developed various departments through which the films had to pass and has now grown into a vast organization in the San Fernando Valley Studios, Hollywood. Work starts in the Story Department, where the action is composed in detail. The Layout Department then plans the chief scenes and the Dialogue Department provides the words. Next comes the Animation Department, a chief contributor to the quality of the Disney films. Here the principal artists work out the details of movement in the master sketches. Liaison at this stage is very close with the Music and Sound Effects Departments, where the dialogue and sound are recorded and the mouth movements of the speakers photographed to guide the artist in synchronization. Then the results pass on to the Technical Section. The various grades of artists, from key men to copyists, produce the necessary 11,500 single pictures painted on celluloid which make up an 8-minute cartoon. In order to reduce the number of separately drawn pictures, the artists draw each character in a scene on a separate sheet of transparent celluloid. These sheets are then slipped into a frame which is placed in front of a miniature setting which suffices as background for a whole sequence. For the next picture of the sequence only those sheets which register movement have to be re-drawn. If the film is coloured, the artists paint in opaque colours the characters on the transparent celluloids. The Camera Department then shoots these composite pictures one by one.

See also FILMS, CHILDREN'S; CINEMA, HISTORY OF.

FILMS, CHILDREN'S.• It is estimated that 65% of the children of school-age in England go to the cinema once a week or more, and that only 5% do not go at all. It is obviously important, therefore, to provide children with the right kind of film for their entertainment. The British Board of Film Censors, by classifying films as H (films to which no child under 16 can legally be admitted), A (films which a child under 16 may attend only when accompanied by parent or other adult), or U (films for universal showing), attempts to ensure that children shall not see films from which they might suffer, particularly by shock or fright. Social surveys, recently made, emphasize that the average film programme for adults—the programme of 'escapist', 'thriller', or 'glamorous' type—presents children with a distorted view of life and an unsatisfactory code of values.

Only one country in the world, the Soviet Union, has special Children's Cinemas—cinemas to which no adult is admitted unless accompanied by a child. In three countries—the Soviet Union, Denmark, and England—are there special production units for children's films. But some other countries, notably Sweden, Czechoslovakia, and France, produce an occasional film especially for children. Although America has no production unit for children's films, children have adopted Walt Disney cartoons (*see* FILMS, ANIMATED) as particularly their own, and many of the Westerns and Cowboy films have had great success with children.

The special production unit for children's films in England was set up in 1944 by one of the large film organizations. In the three years 1944–7 it produced 106 films. It has an Advisory Council which includes representatives of interested official bodies such as the Home Office and Scottish Office, and of voluntary organizations such as the National Association of Boys'

Clubs. The (igs are attended not only by officers of the production unit but also often by producers and directors. In collaboration with the Film Unit's officials, it suggests and chooses scripts and has the ultimate voice in the editing of films. It is kept informed of the reception of films by child audiences, so that its policy may be closely related to children's tastes. The films produced under its direction are shown in the 400 cinema clubs run by this organization in Great Britain, at which an average of 400,000 children attend each week. They are also available for all other children's film matinées and clubs, of which there are 2,500 in Great Britain.

About half of the children attending are between 7 and 10 years old. The programme usually consists of a cartoon, a non-fiction short, a full-length film, and an episode of a serial. Many of these film matinées show films made originally for adults, but not unsuitable for children. Occasionally a foreign film produced for children is shown, and some of these have been very successful. Examples of these are, from Russia, *The Magic Seed* (the Russian version of the story of Jack and the Beanstalk), *The Magic Horse*, *The Land of Toys*, *The Elephant and the Skipping Rope*; and from Sweden. *House*

AN AUDIENCE AT A CHILDREN'S FILM
Taken at the Odeon, Swiss Cottage, 1948
Children's Entertainment Films

Goblin (a fairly tale). The children's films produced by the English are now widely shown, and include a travel series, *Lapland, Czechoslovakia*, and *Poland*, in which two English children are transported by magic to these countries; some nature films, such as the series *With Uncle Bill at the Zoo;* story-films of adventure and achievement, such as *The Little Ballerina, Circus Boy*, and *Under the Frozen Falls.* Some of the films produced by the Children's Entertainment Films Unit are made in other countries, for example, the very successful film *Bush Christmas*, which is a full-length adventure film made in Australia. Experimental films undertaken recently include *The Voyage of Peter Joe*, a series of two-reel slapstick comedies, devised to supply the place of a serial without suspense but with the weekly recurrence of familiar characters; the *Club Magazine*, a collection of items of interest to children; and a series of six Community Singing Films, such as *Rio Grande* and *Dashing Away with the Smoothing Iron*, coloured cartoon films intended not only to entertain but also to encourage community singing in film clubs.

There is a general increase of interest in the production and showing of children's films, and the Soviet and English experiments are receiving much attention in other countries. In England it is now recognized that children should have their own entertainment films just as they have their own journals and books. There is a movement towards a closer association between the educational system and the films—between the Local Educational Authority and the Children's Film Clubs. And there is widespread approval for the production of more entertainment films devised especially for children and based on the conclusions about children's film tastes which trained observers have recorded. Children, according to these observers, dislike love scenes, are bored by lengthy conversation, and like robust action, adventure, child actors, animals, and sport.

See also THEATRE, CHILDREN'S.

FILMS, DOCUMENTARY. The recording of facts on film is as old as cinema itself; therefore newsreels, in so far as they record what has actually happened, are to that extent documentary. But as cinema continued to develop, some films were made, notably by Robert Flaherty which were not merely casual reports for the newsreel, but careful studies of some

aspect of real life, intended to show clearly and vividly what was in that life. One of these films, Flaherty's study of the Hudson Bay Eskimos in *Nanook of the North* (1922), did not merely record Eskimo life, but interpreted it with sympathy and creative understanding, and so may be called the first true documentary.

Most film-making countries during the 1920's produced examples of documentary: France produced travel films and studies of city life, such as *Rien que les Heures*; Germany produced such films as Ruttmann's *Berlin*, the famous symphony of a city; Russia made state films on social problems and developments; and America made films such as *Grass, Chang,* and *The Covered Wagon*.

To Britain, however, belongs the credit of founding a documentary movement with a purpose and a policy, and of setting a standard in documentary films unsurpassed by any other country. John Grierson was the founder of this movement. He saw how the cinema could be used to explain and interpret the living scene; and how, through it, people might come to know one another and each other's work better and more sympathetically. He saw also that in the everyday life and work of men there was raw material for the screen as inspiring as any a film-script could provide; that in certain circumstances the acting of ordinary people might be more effective than that of trained studio actors; and that there were living scenes which could not be rivalled by artificial backgrounds. Largely under his influence British documentary developed. Between 1929 and 1939 Britain made some 300 films on many aspects of life at home and in the Commonwealth. Many of these were to become famous: for example, *Drifters* (John Grierson), *Song of Ceylon* (Basil Wright), *Housing Problems* (Arthur Elton and Edgar Anstey), *Shipyard* (Paul Rotha), *B.B.C.* (Stuart Legg), *Nightmail* (Harry Watt, Wright, and Cavalcanti), *We Live in Two Worlds* (Cavalcanti), and *North Sea* (Watt). Films such as these succeeded in explaining the part different people were playing in the community; and they sometimes suggested ways, also, in which that life could be bettered.

As the movement grew, it became clear that there were many branches of documentary. There were the films of scientific record explain-
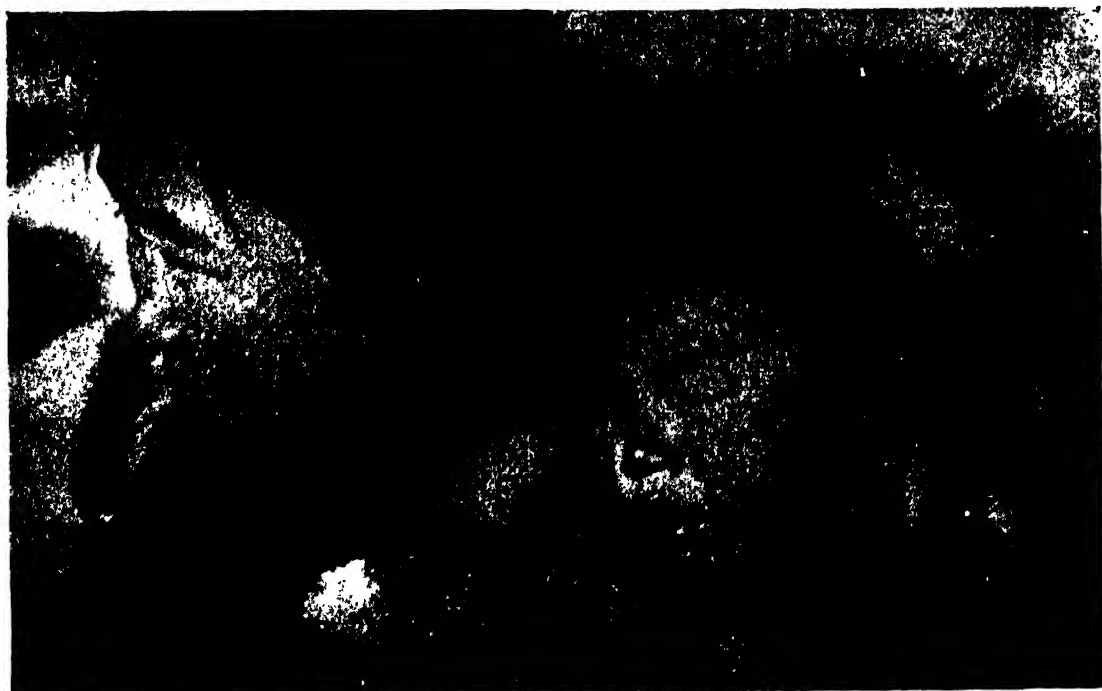
A SCENE FROM 'NANOOK OF THE NORTH', PRODUCED IN 1922
This film, produced by Robert Flaherty, was the first true documentary. *National Film Library*
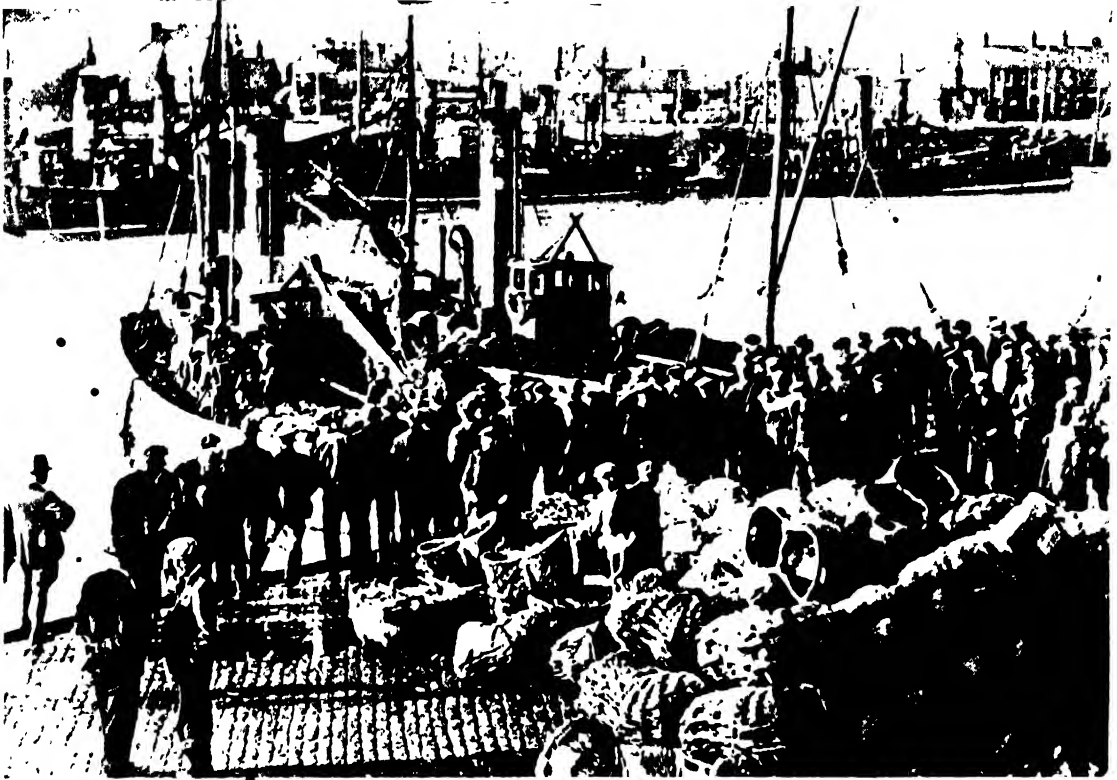
A SCENE FROM THE DOCUMENTARY FILM, 'DRIFTERS'
This film, produced by John Grierson, told the story of the life of the North Sea herring fishermen
Empire Marketing Board

ing a process or experiment; the instructional films with their special technique of teaching; and the documentary films proper, which, to use Grierson's phrase, are 'the creative interpretation of reality'. Both Government and industrial sponsors enabled these films to be produced, and though some were shown in public cinemas, their most consistent audiences were to be found in the many social organizations and schools to which the films were exhibited. This system was greatly enlarged during the Second World War when the Ministry of Information developed mobile film units all over the country which showed their films to large audiences every year. Films were used throughout the war for technical instruction, information, and propaganda, both for service and civilian audiences. At the request of the Government documentary films were widely shown in cinemas. Since the war the double-feature programme has made it unlikely that documentaries will be shown generally.

Some of the feature-length documentaries, however, have been very successful and can serve as the main feature of any cinema programme. Such are the colour film *Western Approaches*, a description of the Merchant Service during the war, and Paul Rotha's *World of Plenty*. But the short documentaries, if they are to reach the people most interested in them, must rely on private audiences in FILM SOCIETIES (q.v.), schools, youth clubs, institutes, and guilds.

In 1939 Grierson went to Canada as Government Film Commissioner and founded the National Film Board of Canada, a large-scale organization for producing and exhibiting documentaries. America, too, had begun to produce documentary, notably in the *March of Time* series (1935 onwards) and the films of Parc Lorentz. In these countries, too, the war greatly extended the private audience for documentary America, Canada, and also Russia are consistent documentary producers and users.

Along with the book, the radio, and the newspaper, the film has taken its place as an accepted medium of public information. Time, experience, and the increased provision of apparatus for exhibitions to private audiences are helping it in its development.

See also CINEMA, HISTORY OF; FILMS.

FILMS, PRODUCTION OF. Behind every completed film there are months, perhaps even years, of work and preparation, for film-making is an extremely technical and costly process. The modern film studio is a huge organization with a large staff and many different departments, each with its own special work, and every film passes through a number of different stages before it is completed and finally released for public showing.

The film begins its life as a 'scenario' or script, written much in the form of an ordinary play. When a suitable script has been selected, a good deal of preparation is necessary before any photographing of it is done at all. The script has to be 'broken down': lists are made of the actual scenes, the stage or setting on which they are to take place, the order in which they are to be photographed, the actors who will appear in them and the clothes that they will wear, the furniture or 'property' needed, and details of special effects such as fog, rain, or wind. Photographic and voice tests are also made to help to select suitable actors or actresses for the main characters, and also to decide on the best make-up, hair style, and costume for each actor. Tests must also be made on the best methods of lighting a particular subject.

The actual filming takes place in a part of the studio called the 'Sound Stage', and here the scenery or 'set' is erected. Sets are designed by the Art Director, and are made to fit into the Sound Stage, one set covering all the shots in a particular scene. The set is built according to

FILMING AN OUTDOOR SCENE IN THE STUDIO
The director waves the grass in front of the actor's face, to see which way the wind machine should blow it. *Paul Popper*
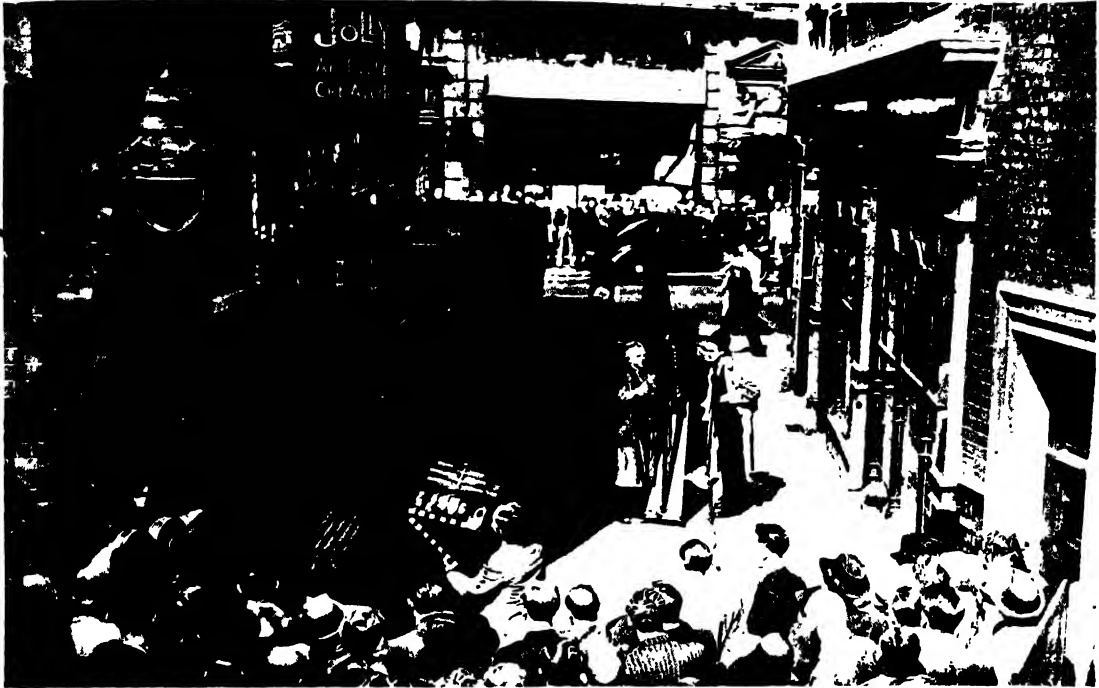
FILMING ON LOCATION
A camera crew from Ealing Studios films a scene in Bridle Lane, Fleet Street. *New York Times*

the special camera angles that are to be used, the fields of view of the particular lenses, and any special lighting effect required. Very often small cardboard models of the set are made first and submitted for comment to the producer and director and to the heads of the departments which will actually build them. The erection of the sets is a very costly item of film-making, for they have to be absolutely realistic and give the appearance of solidity. They are mostly plaster and wooden constructions supported on tubular steel scaffolding. Very often whole portions, complete walls or staircases, are on rollers and can be pushed in or out of position in a few moments—yet a wall that shakes or a banister that wobbles can completely spoil the effect of the scene. •

Not all scenes are shot in the studio. Every big studio has its 'lot', an area of ground where sets are built out-of-doors, so that very extensive settings can be used. In England this, naturally, can be done only in the summer. The greater part of *The History of Mr. Polly* was filmed on a studio lot at Denham, which has a river running through it, and the whole of the main street of the town was set up there. This was the only practical way of filming this story, as a large part of the town had to be burnt down in the fire scenes. A film showing an earthquake can be managed in the same way. Sometimes a real-life background is required, such as a busy street, a railway station, a South Sea island, or anything else that can be more satisfactorily photographed from the real than built in the studio. The film unit then goes out 'on location' as it is called. Locations vary immensely: a trip may be only a short excursion from the studio to a country church or lane, in order to photograph a small scene lasting a few minutes on the screen; or it may be a journey of several months, the complete film unit going abroad, perhaps to Italy, Africa, or South America, for the making of the greater part of a film. For example, some scenes of *Henry V*, notably the charge at Agincourt, were made in Ireland. The *Blue Lagoon* was made in the Fiji Islands, and for *Christopher Columbus* a large unit went to the Barbados. Exact replicas of the *Santa Maria* and Columbus's other two vessels were built in studio workshops for the film. *Scott of the Antarctic* was filmed partly in
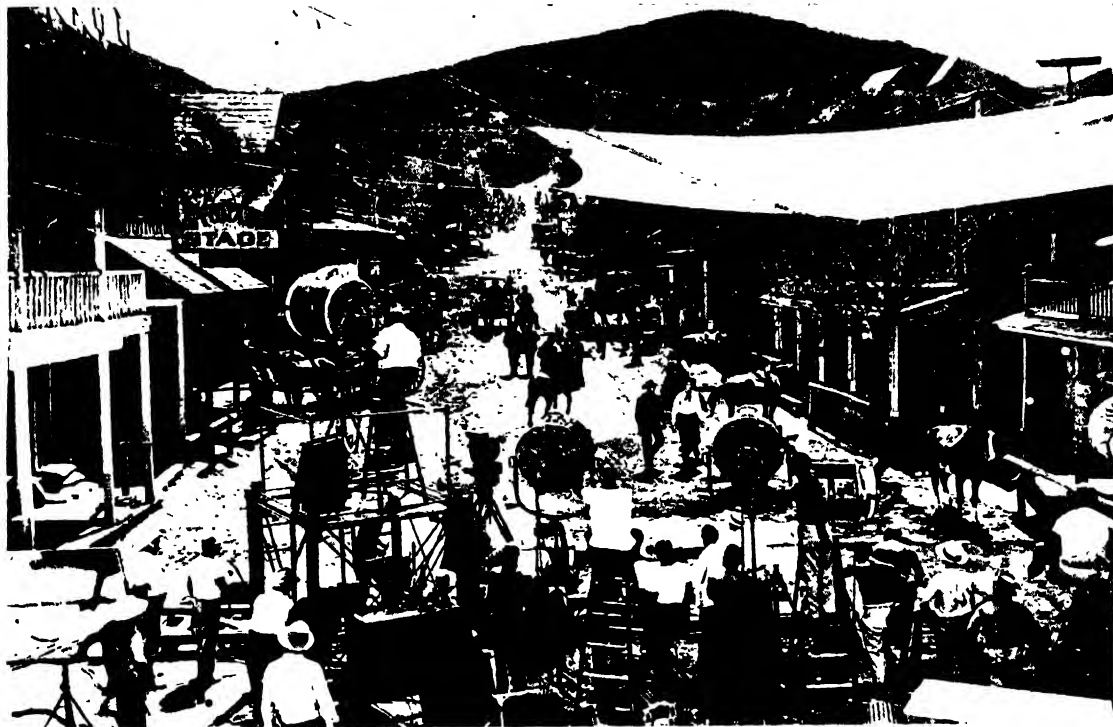
FILMING ON A PERMANENT OUTDOOR SET

This set, on Warner Brothers' ranch in California, is adapted for use in many Western films. *New York Times*

Norway. Authenticity is often achieved by filming a picture in the actual place of the story, as with *Men of Arnhem*, taken where the battle was actually fought at Arnhem.

All outdoor filming is, however, very expensive, partly because sunshine is essential to the making of a film out-of-doors, and time often has to be wasted in waiting for suitable weather. There are several processes, therefore, by which similar scenes can be shot in the studio, perhaps the most widely used being 'back projection'. A film is taken of the required background and projected on to a screen set up in the studio, the action being played before it and both photographed together. Such scenes as the deck of a liner with the sea and sky behind, a car moving along a street with the traffic seen from the rear window, an aeroplane in flight with the clouds going by, may be taken in this way. Occasionally even a still picture, like a magic-lantern slide, is used as background. Experiments are being made in new forms of back projection which, it is hoped, will save considerable time and money in the production of films.

The actual filming or 'shooting' of a scene has become nowadays a highly organized affair. The day previously, a 'Call Sheet' is made out and circulated to the heads of all departments concerned. This gives the particular scene which is to be shot that day, the names of the actors required, the time they are wanted on the set, the time they should go into the hairdressing and make-up departments, the number of the stage in the studio where they will be working, and any other relevant details. Generally the episodes of a film are not acted consecutively as they would be on the stage, because it would not be economical to have a different stage for each separate setting needed, the actors and technicians going back and forth between them just as the story dictated. Instead, only two or three stages are used, and the scenes belonging to one particular background are filmed one after another regardless of where they come in the story. When all those particular scenes have been filmed, the set can then be taken down and another set erected. Occasionally, however, a film is shot almost throughout in sequence,

Hamlet being an example, for it was more practical in this case, as only two or three settings were needed.

When pictures are not shot in sequence, much care has to be taken to preserve the continuity of the film—and this is the special work of the continuity girl. She must watch the filming closely to make sure that the shots will match each other when they are put into the right order, so that we do not see people falling into rivers and coming out dry, or suddenly appearing in the same scene in a different hat, or smoking a cigarette that becomes longer. Consecutive scenes are sometimes shot weeks apart, so that even such details as the length of an actor's hair have to be watched.

The shooting of each tiny episode is called a 'take'. 'Takes' vary greatly in length, but are usually not more than half a minute or a minute long—a two or three minute 'take' being an exceptionally long one. Experiments have been made in filming a whole scene in one long 'take', lasting 10 minutes or even more: this was tried in Alfred Hitchcock's *Rope*. It is not always practical, however, as it involves long rehearsals and special settings. Each scene is filmed or shot several times over, so that the editors and cutters who assemble the finished film have a complete and detailed record of each scene, shot from various angles and distances. Many 'takes' are also made of each shot until the best is obtained; but only selected ones are actually printed, and these are shown the next day in a small theatre in the studio to the unit concerned. The director then selects from these, the one he chooses being the only one retained when the film is cut. The 'rushes', the name given to this daily showing of the previous day's work, usually occupies only 5 or 10 minutes, although the filming has involved, perhaps, half a dozen or more different 'set-ups' or camera angles, and three or four 'takes' of each episode. That is why a normal picture of an hour and a half's running time may take 12 to 15 weeks to shoot.

The sound part of the film is usually recorded at the same time as the picture is taken. The sounds, speech, and music, are picked up by microphones and are recorded on a 'sound camera', usually located in a truck outside the Sound Stage. This camera contains the apparatus necessary for turning the sound waves into light, and registering them on a celluloid film, similar to the ordinary picture film. The Sound Stage has insulated walls and ceiling and double doors, so that no sound outside the studio can be picked up by the microphones, which are extremely sensitive. The microphones, perhaps two or three in some shots, are on long movable arms called 'booms', on wheeled tripods, so that they are extremely manœuvrable, and can follow the actor as he moves about, keeping always just the right distance from his mouth, and yet out of view of the picture camera. They can also be turned to 'favour' each of the actors as they speak. An operator on the stage controls the volume of the sound, which he hears through headphones, via the microphones. It is the control of the volume and the positioning of the microphones which creates the illusion of the speech actually coming from the mouths of the actors, although, in the cinema, it really comes from loudspeakers in fixed positions below the screen. The sound and 'vision' cameras are electrically synchronized, the beginning of each 'take' being marked on both sound and vision films; and they are then both printed on one film in the laboratories, a process called 'marrying'. The modern sound picture, therefore, unlike some early talking pictures, for which the sound was recorded on large gramophone records, cannot become unsynchronized.

Finally, the film goes to the cutting-room where the material is sorted out, further selections and rejections made, and the whole edited and arranged in sequence so that it runs smoothly. Music also has to be recorded and added, and a certain amount of 'post-synchronizing' has to be done: since certain circumstances make it impossible always to record voices or sounds perfectly at the time of filming, these are sometimes recorded afterwards and added to the film. The editing of films is highly specialized, and a considerable time elapses between the actual photographing and the final showing of the film to the public.

See also CINEMA, HISTORY OF.

FILM SOCIETIES. The purpose of a film society, whether it is a large organization meeting periodically in a cinema, or a small group exhibiting films on sub-standard apparatus, is to allow an audience to choose the films it wants to see. A film society serves people who are interested in aspects of the film which are very little represented in the public cinema. Its members may want to see foreign films, or to study the

history of the film, or to see films on special subjects made for special audiences, such as doctors, housewives, or social workers. The film societies can obtain films from film libraries. Some of these are official (such as the British Central Film Library and the National Film Library), some industrial (such as the libraries controlled by the oil and gas industries in Britain), others purely commercial.

Since 1925, when the London Film Society was founded, societies have been formed very rapidly throughout Britain and the Dominions. The Film Societies have developed interest in the art and history of the film, and have prepared audiences for the specialist and repertory cinemas which are now numerous. Children's Film Clubs, which usually meet on Saturday mornings, are also being started in many places (*see* FILMS, CHILDREN'S).

See also CINEMA, HISTORY OF; FILMS.

FIREWORKS. A firework is a container, or 'case' as it is known in the trade, filled with a mixture capable of burning without help from the oxygen of the air. To achieve this result, one at least of the ingredients must contain a supply of oxygen which it parts with readily. Such an ingredient is saltpetre (potassium nitrate), which has been widely used in Asia for cooking and curing meat. We do not know when fireworks were invented. From earliest times they have been used in China for amusement and in religious festivals. We can imagine that the first Asiatic experimenter in pyrotechny —the science of firework-making—may have dropped some of his cooking-salt into the embers of his fire. He would have noticed that the salt made the fire glow and sparkle, and so he may have tried his hand at making tinder with a mixture of saltpetre and charcoal. The use of a third, easily inflammable ingredient, sulphur, would soon suggest itself as an addition. In varying proportions, these three ingredients appeared in almost all firework mixtures for many centuries; but it was not until the invention of the gun during the 12th century that the
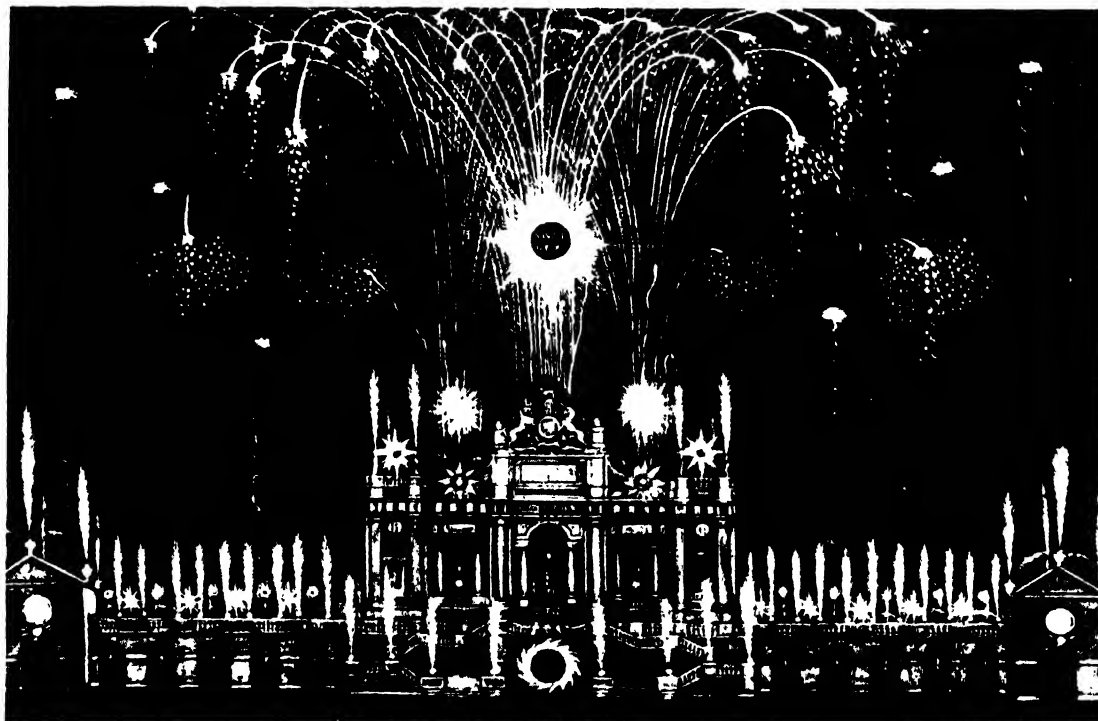
18TH-CENTURY FIREWORK DISPLAY
A display held at St. James's Palace to celebrate the Peace of Aix-la-Chapelle (1748), after the war with France

20TH-CENTURY FIREWORK DISPLAY
Held on the Thames, to celebrate victory in Europe after the Second World War, 1946. *I.N.A.*

particular adjustment most suitable for the purpose came to be known as gunpowder (*see* Explosives, Vol. VIII).

The Chinese employed the force of the mixture of saltpetre, charcoal, and sulphur to drive a rocket into the air by the recoil from the rapid burning of this mixture compressed in its body. They also produced a very striking fountain effect by the addition of powdered iron to the mixture. This is still known as Chinese Fire. A knowledge of firework mixtures gradually spread from the East to Europe. In the Middle Ages the Greeks made use of a combination of saltpetre, sulphur, and pitch in warfare for setting on fire the enemy's ships or when besieging a city. In the years before artillery, Greek Fire was an almost invincible weapon.

The first Europeans to produce fireworks were the Italians. Fireworks used to form part of theatrical performances, given in connexion with religious celebrations. Later, firework displays became accepted as an entertainment in themselves. By the beginning of the 17th century

they had come to be recognized as the natural climax to such public celebrations as Coronations, Royal Marriages, and Victories. For such occasions elaborate structures known as the 'Machine' or 'Temple' were set up, and from these the fireworks were discharged. In 1748 two Italians staged a most ambitious display of that type in Green Park, London, for the Peace of Aix-la-Chapelle. On the Continent, and particularly in France, even more extravagant spectacles were staged; but however elaborate the setting might be, there was little real advance or improvement in the actual fireworks displayed. No colour, save that of ordinary flame and the glow of sparks, was as yet possible; but after 1785, when the French chemist Count Berthollet discovered the salt potassium chlorate, it became possible to make coloured fireworks. When used instead of saltpetre as the oxygen-bearing ingredient in a mixture, potassium chlorate produces enough heat during its burning to turn into gas the metal of any metallic salt it may contain. This gas gives distinctive

colours to the fire: salts of strontium give a red flame; those of sodium, yellow; of barium, green; and those of copper—in the presence of chlorine released from the burning chlorate—blue.

Mixtures used for producing force and spark effects still included saltpetre; but in flame mixtures, such as are used in the stars for rockets, shells, and Roman candles, as well as the embellishments on set-pieces and display devices, potassium chlorate became indispensable. In the middle of the 19th century the addition of the metals magnesium and aluminium produced a brilliance in fireworks previously unapproached. It was the introduction of colour that made possible the huge 'lancework' set-pieces, often up to '600 feet in length, which were such a feature of the world-famous Crystal Palace displays. These displays took place from 1865 until 1935 when the Crystal Palace was destroyed by fire. A pictorial design, landscape, battle scene, or emblematic representation was outlined in small fireworks of different colours known as 'lances', often more than thirty thousand being employed in one picture.

The largest display of fireworks ever fired was that exhibited on the Thames on Victory Day, 9 June 1946. Guy Fawkes Day, 5 November (see GUY FAWKES, Vol. V), is the traditional occasion for fireworks and bonfires at home. The rockets, Roman candles, squibs, golden rains, and Bengal lights used on such occasions are miniature counterparts of those which go to make up the large public displays.

FISH, see AQUARIUM; ANGLING, FRESHWATER; ANGLING, SEA; BIG-GAME FISHING.

FIVES. This very old ball game was known in both France and England by the 14th century, but was probably played much earlier. In France it was called *jeu de paume* (palm game), and in England hand tennis. There still exist several Elizabethan fives courts of the 'open court' type with a wall only at one end. Now fives courts are generally of the 'closed court' type with walls on three or even four sides, and are found mainly at the older schools and colleges. The game is called 'fives' because it is played with the 'bunch of fives'—that is, hand with five fingers. The ball is usually hit with the gloved hand, though some schools use a small bat. The ball is small with a white leather cover and a hard core of cork and twine. It weighs

about $1\frac{1}{2}$ ounces and is about $1\frac{1}{4}$ inches or less in diameter. There is some variation in the size and plan of the court, and this has led to differences in the rules, two main types of the game having developed—Rugby Fives and Eton Fives.

Rugby Fives is played in a plain court with a front wall about 20 feet high and two side walls sloping down towards a 6-foot high back wall (in some courts there is no back wall). The

RUGBY FIVES COURT
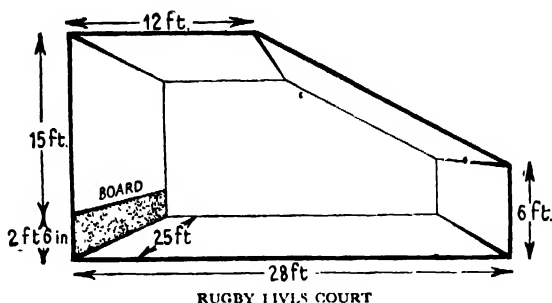
floor, which is of paving or concrete, is level and is marked into right and left fore and back courts. On the front wall there is a horizontal line about 3 feet from the ground, often marked by a buttress or wooden strip. The ball must hit the wall above this line to remain in play. The game can be played by two or four players, and, as in BADMINTON, SQUASH, or RACKETS (qq.v.), points can be won only when serving. The server or 'hand in' stands in the left-hand forecourt with his partner diagonally opposite in the right-hand back court. He throws the ball so that it bounces first against the front wall, then against the right-hand side wall, and so in front of his opponent or 'hand out'. The latter may refuse the service until he receives one with which he is satisfied; then he hits the ball against the right-hand wall and the front wall above the horizontal line; the ball is returned to the front wall, either direct or via one of the side walls, by 'hand in' or his partner; and the rally continues until one side or the other fails to return it, allows it to bounce more than once on the floor, or hits it out of court. Either of the side walls or the back wall may be used to vary the angle of the ball's flight. If 'hand in' loses the rally, his partner serves; when the latter loses a rally, the service passes to the other pair, who then have an opportunity to score. Should the ball hit an opponent in its flight towards the front wall, a 'let' is given, and the point is played again. The game is won when 15 points have been scored by

one side or the other.. .. 13 all is reached, the best of 5 points may be played; at 14 all, the best of 3.

Eton Fives is played in a more elaborate court than Rugby Fives, for it was first played against the chapel walls at Eton where the buttresses provided the sides of the court. There is no back wall, and the left-hand side is broken by a low wall known as the 'pepper-box', which juts out into the court and has a hole by it. The fore court is at a different level from the back court, there being a step of 5 inches in the middle. The horizontal line is also slightly higher—4½ feet from the ground.

Fives is a vigorous game which exercises all the muscles of the body; it is fast and demands concentration, quick thinking, and great energy. A good player hits the ball hard with the palm of the hand rather than the fingers, and is able to hit the ball equally hard with either hand. Fives, therefore, has the great advantage over all racket games that there is no awkward backhand stroke to master. It is important to watch the opponent's position and learn the more subtle cross-court angle shots which can draw him to the front of the court and so make him vulnerable to the harder drive to the back and along the side walls. Above all, the ball should be kept as low as possible above the line on the front wall: high shots are an invitation to the opponent to volley, which gives him a chance to kill the ball and finish the rally.

See also SQUASH; RACKETS.

FLAGEOLET, *see* RECORDERS.

FLOWER SHOWS, *see* Vol. VI: FLOWER SHOWS.

FLOWER COLLECTING. Nothing can teach us more about the country-side, or train our powers of observation better, than the continual search for new specimens of wild flowers. For successful collections a great deal of preparation is necessary. In the first place, the collector must know something about flowers and what distinguishes one plant from another. He should also know about the structure and working of plants, the time and duration of their flowering period, and the way in which their fruits are formed and their seeds distributed.

To begin with it is best to make a temporary collection of living flowers, which should be well displayed in jars and clearly labelled. Collec-tions of spring flowers, hayfield or cornfield flowers, autumn leaves and berries, or winter twigs will last a long time and give ample opportunities for study.

Permanent collections of wild flowers can be made in several ways. The flowers may be photographed; but this, attractive as it is, is rather an expensive hobby, and is successful only after much study and practice. A collection of wild-flower paintings can record better than any other method the colour and the stages of growth of the specimens. The paintings, carefully labelled, can be arranged in a book or folder in a logical order—according to the time of flowering, place of growth, family group, or whatever pleases the collector.

The more common method of making wild-flower collections is by preservation of the actual flowers. Here the collector selects flowers in various stages of opening, together with leaves typical of the plant, arranges them in an attractive pattern, and dries them by pressing them between pieces of absorbent paper. The drying must be done as quickly as possible to prevent the plants decomposing or going mouldy. The paper should be non-sized, soft enough to apply fairly closely to the specimens, but strong enough

Call us not weeds—we are flowers of the sea—
For lovely and bright, and gay tinted are we,
And quite independent of sunshine or showers
Then call us not weeds—we are Ocean's gay flowers.

A VICTORIAN SOUVENIR OF GUERNSEY MADE FROM
DRIED SEAWEED

not to break up when it has absorbed the moisture from the plant. Although special paper is made for the purpose, blotting-paper or even old newspapers will do quite well. The paper must be changed frequently until all the moisture has been absorbed. Pressure must be carefully and evenly applied. When the drying is complete, the flower should be mounted on a card with narrow strips of transparent adhesive paper. A label, giving the common and botanical names, and the place and date of finding, should be affixed. A piece of cellophane stretched over the card will protect the specimen from dust and damp.

See also Vol. II: FLOWERS; PLANT.

FLÜGELHORN, *see* BRASS INSTRUMENTS.

FLUTE, *see* WOOD-WIND INSTRUMENTS.

FOLK DANCING. 1. Folk Dance develops out of the life of the people who perform it, and so reveals something of their customs, habits, and work. Most nations have their own folk dances, and although the purpose for which a folk dance was originally performed has often been forgotten, it is still possible to distinguish between the various types of dance.

Styles of dancing are influenced considerably by the climate: brisk, energetic, and clearly defined movements belong to cold countries such as North Russia, Scandinavia, and Scotland; fiery and passionate movements to countries with temperatures which vary sharply, such as Spain, Mexico, and South Italy; and languorous, flowing movements to very hot countries such as South India and Ceylon.

The style of dance people perform is also determined by the kind of ground they dance on. Desert dwellers all over the world make sudden convulsive movements, constantly changing their weight from foot to foot, as if the sand were too hot to allow a pause. In the rolling steppes of Asia the hunters and breeders of horses perform movements which are free and broad. Like the life they lead, their dances are never 'set', a performer often breaking into an unexpected step showing some aspect of the hunt, copying the antics of a horse, or with great leaps describing how many miles he has travelled. The rhythm of their dance is most irregular. The dances of most people living in fertile plains or river valleys are performed by large groups at certain times, originally celebrating pagan festi-

vals of spring, autumn, winter, death, or weddings, and now in Europe usually linked to Christian festivals. These dances are usually 'set' and extremely regular in form. The accent of each movement is downward with very little high jumping. The steps, whether large or small, are never placed very precisely, owing to the uneven state of the ground and the weight of the rich earth on the boots. The rhythm is even, but the speed increases with the dancers' growing excitement, especially among less cultured races where the repetition of the same series of simple steps works the dancers into a frenzy. Often, when in a frenzy, a man will dance on fire or swords (Jugoslavia and India) or, like the Whirling DERVISHES (q.v. Vol. 1), begin to prophesy. Dances of mountain people are easily recognized. Because they are confined to small areas, the dancers create intricate steps utilizing every bit of space, and add exciting high jumps. The accent is always upward, as if the dancers wanted to keep off the hard surface, and the whole effect of the dance is as light and invigorating as the mountain air.

2. RITUAL DANCE. At all stages in man's history he performs dance-rituals, which arise out of his natural surroundings and reflect his different kinds of work and different living conditions. In Europe these ritual dances have developed into the innumerable circle dances performed on Feast days, found particularly in the Balkan countries, where they are called *Kolos*. The dancers take hands and move round in a circle, either clockwise or anti-clockwise—usually the clockwise dance being for joyful occasions, such as weddings, christenings, and harvestings, and the anti-clockwise dance for sorrowful occasions, such as funerals. In some sad ancient Scottish ritual dances, the dancers moved 'widdershins', that is, in a direction opposite to the movement of the sun.

The steps of the *Kolos* are often quite simple. A girls' dance from Macedonia goes as follows: 1 step to the R, bring L foot round in a circle in front of R; step to R, close L to it; step to L, close R to it; step to R, close L to it. The movement then commences to the left; but gradually the dancers start to bounce, and the rhythm becomes very intricate. Greek dances usually have a 5/4 or 7/8 time signature. In Moslem countries there are no regular bars of music, whilst phrases of 9 or 10 bars are common everywhere. The *Kolos* often start slowly and

THE REED DANCE
A ritual work dance, performed at Santa Catarina in Mexico
Paul Popper

work up to a great speed, those of Roumania being the liveliest, while those of Jugoslavia are often more stately. Sometimes they are danced round some altar, or perhaps round a bonfire. The same *Kolo* is danced by people of all religions. Sometimes it is performed exclusively by the women, or by the men, or by certain groups. The *Hassapikos*, for instance, which originated in Constantinople, was danced in Turkey, Greece, and Armenia by the butchers on their Feast Days. These circle dances are also common in the U.S.S.R., Czechoslovakia, and parts of France.

Often circle dances, such as the Greek *Kalamatianos*, open up into a chain to be danced by men and women standing alternately. Here the chain keeps to the basic step, but the leader embroiders on it by performing difficult steps. Often in these chain dances the dancers are linked by handkerchiefs. The Provençal *Farandole*, the most interesting of these, is supposed to

represent the story of Theseus in the Labyrinth. The dancers wind down the street in a long serpent, sometimes going in and out of the houses. Then they coil into a tight maze, out of which the leader guides them—to finish with all the dancers going under the arch made by the leader and his partner. The handkerchiefs represent the thread leading Theseus out of the Labyrinth. This dance, which represents a very ancient rite, can be found in some form wherever ancient Greece formed a colony.

The lovely May Day dances, found in many parts of Europe, are also derived from ancient rituals. Sometimes these are danced round a man dressed up as 'Jack-in-the-Green', or sometimes round a Maypole. The Basques have a sword-dance round their Maypole, before the girls twine the ribbons in and out. The plaiting of maypole ribbons is also found in Czechoslovakia, South Germany, and in Provence. In England such dances were forbidden during the
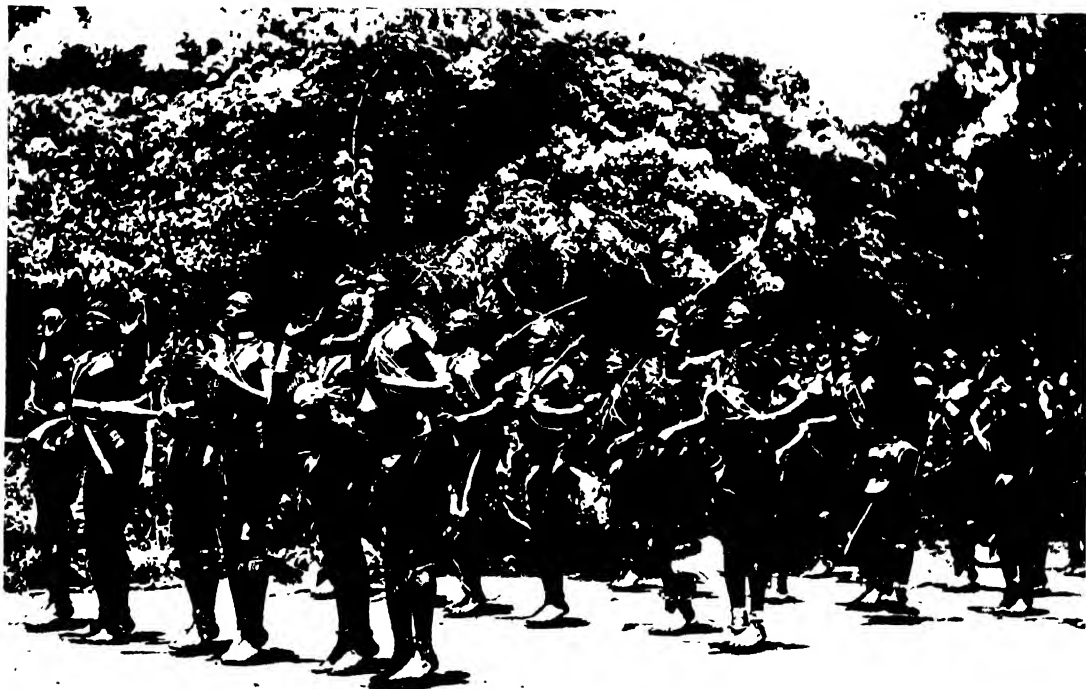
A WAR DANCE
A dance by natives of the Kikuyu tribe in East Africa

Commonwealth, and the people's maypoles cut down.

3. ANIMAL DANCES. Primitive man worshipped animals, birds, and fish (*see* SACRED ANIMALS, Vol. I), and believed that, if he could imitate their movements, he too would acquire their speed, strength, and cunning, and would be the better able to catch them when he needed food. In this way a number of curious animal dances were developed. Among Australian, African, and American tribes one finds turtle, crocodile, lyre-bird, and similar dances. There are Indian cobra and peacock dances. The Finns, like the Yakuts of Siberia, have bear and seal dances. North American Indians imitate bears, hyenas, and foxes.

The most interesting animal dance is performed by the Georgian Cossack who dances on the tip of his toes. In the old days he used to worship the eagle, whose whole method of attacking a victim he imitates in his dance. He swiftly circles round with tiny steps on his toes,

hovers for a moment above his prey, which is often represented by a dagger flung into the ground. He then drops to his knees, seizes the dagger in his teeth, and springs up again as the eagle seizes his prey and soars upward. Like the Hungarians and Poles, all Cossack races, who are great riders and breeders of horses, often imitate galloping and jumping movements.

Another element of the ancient animal dance is found in a Tyrolese dance, where the boy struts round the girl preening himself and squatting, as the mountain cock does at the mating season. The famous Horned Dance of Abbots Bromley has grown from an ancient reindeer ritual, and has a counterpart in a reindeer dance of the Samoyeds. There is a beautiful bird dance performed by the people of the Ural mountains, and the long stretching forward of a leg in some Greek, Basque, and Catalonian dances is thought to have originated in a crane dance

4. HUNTING AND FISHING DANCES. Animal

dances often developed into hunting dances, where the movements of the dance imitated the actual hunt—slow, steady, stalking movements, moments of waiting, a swift attack and kill. American Indians and African natives still perform these dances. Such movements sometimes take their place in warriors' dances, being particularly noticeable in the Circassians' *Khorumi*, where the dancers hunt, wait for, fight, and kill their enemy. In European countries, however, these dances have developed into couple dances where the man chases his girl. In several mountain dances the girl moves in zigzag patterns (supposedly up and down the mountain) followed by her man, who never meets her face to face because of the narrowness of the path and difficulties of balance.

Fishermen's dances are found in Finland, along the Black Sea and Mediterranean coasts, and the coast and banks of the Tagus in Portugal, as well as among primitive lake-dwelling tribes. Here the hands and arms play a most important part, coiling and knotting ropes, hauling and paying out nets, and performing the actions of playing a fish on a line. Occasionally one finds rowing or paddling movements, as in a Maori boating dance-song of New Zealand. Such movements as these are also found in the sailors' dances of any country with pretensions to fishing or naval fleets—as, for example, the English Hornpipe.

5. WAR AND WEAPON DANCES. Warriors' dances began to develop as soon as tribes began to fight each other for possession of the best land, the dances playing their part in inciting a tribe to battle. Most native races still perform the kind of dance in which they gradually work themselves into a frenzy by bringing all their muscles into play, before practising thrusting and spearing movements. This is followed by stalking round and round in a circle, ending by the whole group breaking into wild leaps and

A RITUAL DANCE

Performed in the Punjab Hill States in India. The men carry long sticks and the women handkerchiefs
Paul Popper

A NORWEGIAN COURTSHIP DANCE
Norwegian Official Photograph

dashing off to the fight. In more civilized countries the actual sword play is practised. Thrusting and fencing movements are still found in some Greek soldiers' dances; while the amazing Manx Dirk Dance contains ritual movements before an altar, as well as the thrusting and fencing movements.

Elsewhere, particularly in Scotland, the swords, instead of being held in the hand, are placed on the floor, and the dancers perform intricate steps over and amongst them. In the mountains of the Pyrenees and of eastern Europe, the dancers perform fascinating dances over ice-axes. Sometimes one partner swings the axe whilst the other makes complicated leaps over it. In England the dancers are always linked together by their weapons, and weave intricate figures over and under them (*see* FOLK DANCING, BRITISH). In the Basque and Slovak dances the dance ends by a pretence killing of the leader, and the swords are used as a bier. Sometimes the sword dances are accompanied by clog dancing, which represents a form of work dance —a different form according to the district. The clog dancing represents threshing the corn, treading the grapes, or the intricate winding in

and out of weaving cloth; and the final lifting of the interwoven swords represents the triumphant lifting of the spindles, flails, or flat wooden shafts used to stir grapes.

6. WORK DANCES. When man began to settle on the rich fertile plains and river valleys, his main concern was in cultivating crops and breeding animals, and these interests were reflected in his dances. He believed in dance as a form of MAGIC (q.v. Vol. I), effective in stimulating the growth of his crops. In the rich soil of Armenia and the Ukraine one finds the same harvesting movements of sowing, mowing, tying, stacking, and finally threshing the corn, that one sees in the Manipuri Harvesting dance of India. In the Caucasus and the Crimea are wine, tea, and cotton-picking dances, and the Rose-gathering Festival dances. Woodcutters' dances are found in parts of France, Karelia, and Siberia; Shoemakers' dances in Poland and Scandinavia; Cowmen's dances in Finland and the Ukraine; Rice-gathering dances in Malay and China, and so on. In districts such as Uzbekistan and Armenia, where the main industry is the weaving of cloth and carpets, there are lovely weaving dances. Finally, there is the curious Hobby-

horse dance of Montpellier (France), where the horse's grooms pretend to shoe, trim, and generally prepare him for work.

In Europe many of these dances have degenerated into SINGING GAMES (q.v.), such as the Scottish 'Oats and Beans and Barley Grow' or the Provençal 'Danse Ronde de la Civaia', where the children make gestures to the words of the song.

7. COURTSHIP DANCES. These dances developed out of the fertility rites, when it was necessary for every man to find a good wife in order to ensure the continuance of his tribe. Often in such dances the man shows off before the lady by performing the most spectacular tricks. On the other hand, in some countries, in Spain, for instance, the women dance to show off their beauty by a fascinating play of fan, shawl, handkerchief, or mantilla.

Dances where the man courts the girls as they dance together are found in many countries, including Spain, Italy, and the Tyrol. Many of these contain what is called the 'fertility leap', where the man lifts his girl high up into the air. 'As high as her skirts fly, so high the corn will grow', it is said. In many Scandinavian, Czech, and south German dances the couple occasionally dance and flirt with handkerchiefs, twisting and turning under and over with waltz or polka steps. In one Czech dance the boy says good-bye to his girl before going off as a soldier; in a Lithuanian dance there is an exchange of hats; in the curious cushion dances of Austria and elsewhere the odd boy with the cushion has to try to steal one of the other boys' partners.

8. COMMON CHARACTERISTICS OF FOLK DANCE. No real folk dance is universal, but the same form of dance is often found amongst the people of the same racial group. The contrasted high jumps and low steps of the Basques are found in a large area of the Pyrenees and stretch right into Switzerland. The many forms of *Kolos* are found throughout central Europe and into Asia Minor. Races who belong to the same language group, such as the Finns and Hungarians, sometimes have certain musical forms in common, such as the 'Snatch' or sudden leap up or down to a leading note—a form also shared by the Scots. In all the genuine folk dances of these countries the dancer anticipates the first beat of a bar by leaping or jumping up, to come down lightly on the first or leading note. Most Slav folk music is notable for its unusual intervals. In Russian music the interval

of a fourth is common, and so in their dances one finds many steps which are held for a fourth beat. In Poland the second beat of the bar is often heavily accented, and so is the step which accompanies that beat.

Sometimes an historical event such as a war has caused the dances of two peoples to mix—and so we find, for instance, a Persian war dance performed in Armenia. The folk dances of South America and the Caribbean Islands have been influenced by the white and black races who emigrated there or were taken as slaves; and so the native elements are everywhere mixed with Spanish, Portuguese, French, and especially Negro elements. The dances of every country in which the Negro races are found are distinguished by the wonderful syncopation of music and movement.

There are certain dances which do not come under any of the above categories. The French *Carillon*, for instance, where the dancers' hand-clappings are supposed to represent bells, is an ancient dance designed to drive away evil spirits. There are Indian dances in which the purpose of bells on the dancers' ankles is to keep away the snakes. Then there are dances of acrobatic skill, such as the Irish Jigs, Scottish Seann Triubhas, the Mexican dance on the hat-brim, the Basque dance leaping over a wine-glass, the Azerbaijan dance with a tray of wine-

A CZECHOSLOVAKIAN HARVESTING DANCE
The dancers use the typical movements of harvesting in the dance. *Paul Popper*

DANCE OF SKILL
An acrobatic dance performed in the Ukraine
Paul Popper

glasses, and Spanish and Portuguese bull-fighters' dances in which much play is made with a cloak.

Genuine folk dance, properly studied, reveals something not only of the general physical features and climate of the country, but also of how its original inhabitants lived and worked and of how wars and other events influenced them. Many of the dances of a country, however, are not genuine, but have been deliberately arranged as recreational dances, or so altered by the court dancing masters that they are no longer truly of the people (*see* BALLROOM-DANCING). Others have lost all trace of their original meaning, or it has been deliberately altered to make the old dances suitable for Christian rather than pagan festivals.

See also DANCING, HISTORY OF; TRADITIONAL SPORTS AND CUSTOMS.

See also Vol. I: FOLKLORE.

FOLK DANCING, BRITISH.

In the British Isles we have a wealth of dances and dance-tunes that have been created, fashioned, and handed down to us by our forefathers through successive generations. Many of these folk dances have retained their original ceremonial character to this day, while others have developed as social dances. Certain dances are found only in particular districts, whilst others have a wide distribution. Our folk dances are old only in the sense that our language is old. Being, like language, a natural form of human expression, they have developed with our needs, and have been constantly renewed by use.

1. ENGLAND. Fifty years ago it was commonly supposed that the English people had no dances of their own, and this was fast becoming true because, except in a few country places, the old dances were fast being forgotten. Happily, Cecil Sharp saved them before they were completely lost. His first discovery was on Boxing Day, 1899, when he happened to be staying in the village of Headington, near Oxford. Looking out of the window one morning he saw coming up the road a strange-looking procession of six men dressed in white, gaily decorated with ribbons, with pads of bells tied round their legs, and a white handkerchief in each hand. A concertina player who accompanied them struck up a tune; whereupon the men sprang high into the air and broke into a vigorous dance, waving and swinging their handkerchiefs, whilst the bells marked the rhythm of the step. More dances followed, in some of which, instead of the waving of handkerchiefs, there was a rhythmical clashing of sticks. They were the Morris Dances—familiar to Shakespeare.

This performance of Morris Dances gave Cecil Sharp a hint of the wealth of beautiful music

ENGLISH MORRIS DANCING
These dancers dressed in the traditional costume are performing at Whitsuntide

that was still to be found in the English country-side; and he devoted the rest of his life (he died in 1924) to collecting our folk songs and dances, writing down the tunes, describing the dances, publishing them, and bringing them back again into the everyday lives of the people. For this purpose he founded the English Folk Dance Society, which afterwards merged with the Folk Song Society and became the English Folk Dance and Song Society, with its headquarters at Cecil Sharp House.

Cecil Sharp collected many other Morris Dances, although it was only in two other villages that he was able to see a complete performance, and he had to get the rest of his information from single dancers and musicians. In addition to the Morris Dances, all of which came from the Midland Counties, he found a number of Sword Dances in the North of England, as well as Country Dances and Processional Dances in various parts of the country.

The Sword Dances of northern England are quite different from the better-known Scottish Sword Dances. They are performed by teams of five, six, or eight men. The dancers are linked together by their swords, each holding the hilt of his own sword in one hand and the point of his neighbour's in the other. Without breaking this link, the dancers perform elaborate evolutions, twisting under the swords, jumping over them, and finally working up to a dramatic climax when the swords are deftly plaited together in a star-shaped figure called the Lock. An example of this dance is also found in Shetland, and is described by Sir Walter Scott in *The Pirate*.

Both the Morris and the Sword Dances are men's dances. They are of a strenuous character and require special training and practice. Traditionally they are performed by picked teams of dancers, wearing special costumes and dancing only at certain times of the year—the Morris Dances usually at Whitsuntide and the Sword Dances at Christmas or the New Year. Signs of primitive magic can be seen in the customs which are associated with these dances, and the dances themselves portray their solemn purpose.

The Sword Dance is associated with the Mumming Play in which a mock death and resurrection are enacted (*see* MUMMERS). A victim stands or kneels in the centre of the ring of dancers, who lock the swords together round his neck. The swords are then drawn, and the

WILLIAM KEMPE, THE ACTOR OF SHAKESPEARE'S DAY, WHO DANCED A MORRIS FROM LONDON TO NORWICH
Title page from Kempe's *Nine Days' Wonder*

victim falls down dead, but is afterwards brought back to life by the ministrations of a comic 'doctor'. The play has become very confused and its meaning forgotten, but it is thought to be a symbolic representation of the death of the old year and the rebirth of the new year, in which the dancers and actors ensure the continuity of the seasons by imitative MAGIC (q.v. Vol. 1).

The Morris Dance is also bound up with seasonal fertility rites. It may be that the sound of the bells on the dancers' legs and the waving of the handkerchiefs were once intended to frighten away the evil spirits, and that the purpose of leaping into the air, which is a characteristic of the dance, was to induce the crops to spring up from the earth.

The Morris and Sword Dances are found in other countries besides England, although naturally the forms vary from country to country and even from one village to another. The term Morris had led people to think that these dances originated with the Moors in Spain. This is not the case. The dancers were probably called Moors because at one time they used to blacken their faces—a means of disguise, which they adopted because of the solemn and sacred character of the dance. In some parts of Europe, the Morris or 'Morisco' takes the form of a fight between 'Christians' and 'Moors', who represent the forces of good and evil.

The Processional Dances, which were formerly danced in many parts of England and Wales, were often connected with the blessing of the crops. One of the best known of these is the

AN ANIMAL DANCE
The Abbot's Bromley Horn Dance, danced to a concertina at the cross-roads
Paul Popper

Helston Furry Dance, which is still performed annually on the 8th May at Helston in Cornwall. Formerly the dancers used to carry fresh green and bunches of flowers so that they might bring the purifying spirit of Spring into the houses.

The Country Dances, which are danced in all parts of the British Isles, are social dances in which everyone can take part. They probably had their origin in the Processionals or in the Rounds which used to be danced round a tree or other sacred object; but nowadays they are danced purely for social recreation. They are performed by an equal number of men and women. The steps are simple, but the figures are infinitely varied. There are Rounds, Squares, 'Longways for as many as will', and many other varieties. Most of the popular traditional dances which have survived are of the longways type. The Country Dance used not to be restricted to village life, but was also danced in the ballrooms and at Court (*see* BALLROOM-DANCING). There are many beautiful Country Dances published in the editions of John Playford's *Dancing Master* during the 17th and 18th centuries, and these

have been deciphered by Cecil Sharp and once again made popular. Our Country Dance became fashionable on the Continent during the 18th century, and when it came back to us from France under the name of the *contredanse*, we modestly assumed that it must be of French origin.

2. SCOTLAND. In Scotland the Country Dance has never lost its popularity, and to this day takes its place in all Scottish Balls. Many of the Country Dances are common to the Lowlands of Scotland and England, but the style of performance differs considerably. There is more 'stepping' in the Scottish dances, possibly owing to the influence of the Highland dances. The Scottish Country Dance Society, founded in 1923, has done much to encourage the practice of Country Dance and to maintain a high standard of performance.

There are many distinctive Highland dances, the Sword Dances, performed over crossed swords laid on the ground, being among the best known and the most popular. Others are the Highland Fling and Seann Triubhas (solo dances

originally performed by men only), the Schottische (a partner dance), and the Reels (team dances). The stepping in the solo dances requires great agility and delicacy; and the handsome Scottish dress and the stirring rhythm of the bagpipes add to the fascination of these spectacular dances. Traditional dancing plays a prominent part in the HIGHLAND GAMES (q.v.), and it is also practised in the Army.

3. IRELAND. Here, as in Scotland, the traditional dances have remained popular. Ireland is particularly rich in spectacular display dances —step dances, performed either by solo dancers or by one or more couples. These are divided into Single and Double Jigs, Single Reels, Hornpipes, and Hop or Slip Jigs, according to the different rhythm of the tunes. There are many hundreds of Irish dance tunes, with haunting melodies and lilting rhythms, which have been borrowed by the English, Scottish, and many other people. The vogue of competitions has had the result of producing an elaborate and stylized technique of footwork in the Irish dances; but in the country places a simpler and more natural style of stepping is still to be seen. Ireland also has many social dances, including Reels and Country Dances.

4. WALES. There does not appear to be a distinctive dance tradition in Wales, and only a few Country Dances and Processional Dances have survived.

5. ISLE OF MAN. There are here some interesting dances, and special mention should be made of the Dirk Dance, a solo dance in which the dancer pays homage to the sword. According to the legend this is the dance which the old Kings of Man used to perform on their accession to the throne.

See also DANCING, HISTORY OF; SINGING GAMES.

FOOTBALL, *see* AMERICAN FOOTBALL; ASSOCIATION FOOTBALL; ETON FOOTBALL; HARROW FOOTBALL; WINCHESTER FOOTBALL; RUGBY FOOTBALL.

FOOTBALL POOLS. These are a popular modern form of gambling on the 'pool' or 'parimutuel' system on the results of football matches played in Great Britain (*see* BETTING). Usually the games played every Saturday during the football season in the English and Scottish Football League competitions are the subjects of football pool gambling. Games played in the English and Scottish Cup competitions are included when they take place on a Saturday. The Pools are organized by several well-established firms of good repute throughout the country, and by small local firms, a few of which are not so well run.

Each firm sends a weekly coupon to its clients. This coupon lists the majority of the League matches to be played on the following Saturday. The arrangement of the matches on the coupon are similar in their general principles, though the details of the various pools differ considerably as between firms. Usually all the matches are included in one list, which forms the basis for several pools; for example, one can pick ten results (nine only in some cases); one can select three games likely to be drawn; or four games likely to result in victories for the team playing away from its own ground. Each of these forecasts costs from 6d. to £1, there being no limit to the number of attempts one may have at any pool, though most firms do not permit more than £5 to be staked on one coupon. Other pools usually include five or six specially selected matches, the results of which all have to be forecast correctly. The penny pools, of which most coupons usually have one, are for 12, 13, or 14 matches, the results of which all have to be forecast correctly. The standard system of marking a coupon is: for a home team winning, 1; for an away team winning, 2; and for a drawn game, x.

The proprietors of the organizing firm take a percentage, probably varying from 10 to 20% of the total money staked, before the winners in each particular pool are paid. Firms have been under no legal obligation to declare what percentage they take for themselves, and most of them have not done so. The dividend paid to the winners of each pool depends upon the amount of money staked in that pool as well as upon the number of successful entries. As in all pool gambling, the fewer that are successful the larger will be their reward. If there are no all-correct entries in any pool, the prizes are divided among those most nearly successful. In the penny pools usually three or four dividends are paid. This is the most difficult pool to win, and consolation prizes are an extra inducement for people to enter.

Other countries have football pools organized on similar lines to those in Britain. In Sweden the Government organizes pools on the results of football matches in Britain.

COPY 19th Mar '49 CUT HERE

POOLS TOTALS for SAT. FEB 26th
POINTS POOL £133,961
RESULTS POOL £47,300

1d POINTS

1	Birmingham Man. Utd.
2	Brentford Bradford
3	Bury Cardiff C.
4	Leicester South'pton
5	Crystal P Bristol C
6	Torquay U. Brighton
7	Watford Swindon T
8	Accrington Chester
9	Barrow Stockport
10	Bradford C. Hartlepools
11	Doncaster Darlington
12	Halifax T. Gateshead
13	Mansfield York C.
14	Motherwell T Lanark

ALL 14 MATCHES MUST BE FORECAST

EASIER 6 & FAVOURITE 4

1	Leicester South'pton
2	Crystal P Bristol C
3	Torquay U Brighton
4	Watford Swindon T
5	Birmingham Man Utd.
6	Bradford C Hartlepools

STAKE PER COL. Min. 6d. Max. 20/-

1d RESULTS

1	Birmingham Man Utd
2	Newcastle Arsenal
3	Brentford Bradford
4	Bury Cardiff C
5	Leicester South'pton
6	Crystal P. Bristol C
7	Torquay U Brighton
8	Watford Swindon T
9	Barrow Stockport
10	Bradford C. Hartlepools
11	Halifax T. Gateshead
12	Mansfield York C.
13	Motherwell T Lanark

ALL 13 MATCHES MUST BE FORECAST

On All Pools mark—
1 for HOME
2 for AWAY
X for DRAW
except for Treble Chance mark O

LITTLEWOODS

LITTLEWOODS POOLS Ltd LIVERPOOL Chairman JOHN MOORES Managing Director CECIL MOORES

19th MAR. '49

8 1st Dividends 47895/8/2
163 2nd Divs £131/19/9 1192 3rd Divs £15/17/6
5396 4th " A3 18590 5th " 13/-

5 DIVIDENDS 45%20%14%12%9%

HOME 1
AWAY 2 pts.
DRAW 3 pts.

EASIER SIX FAVOURITE FOUR

12 Attempts 1/- | 18 Attempts 1/6 | 24 Attempts 2/- | 30 Attempts 2/6

QUOTE THIS REFERENCE No. ON ALL LETTERS & TELEGRAMS

17 1st Dividends £1391 3 7
478 2nd Divs £20/14/- 5406 3rd Divs £1/18.-

3 DIVIDENDS 50% 30% 20%

HOME 1
AWAY 2 DRAW X

12 Attempts 1/- | 18 Attempts 1/6 | 24 Attempts 2/- | 30 Attempts 2/6

Great LINCOLN FORECAST POOL

FORECAST IN THEIR CORRECT ORDER

THE FIRST FOUR HORSES
IN THE LINCOLNSHIRE HANDICAP

Run at LINCOLN on SAT. 19th MARCH

TWO DIVIDENDS - 70% 30%

Forecast THE NUMBERS (as listed) of the FIRST FOUR HORSES PLACED IN THEIR CORRECT ORDER

Each Entry must be different	1st Entry	2nd Entry	3rd Entry	4th Entry	5th Entry	6th Entry	7th Entry	8th Entry
WINNER								
SECOND								
THIRD								
FOURTH								
Stakes								

Minimum Stake 3d. per line Maximum 20/-

Place in the Squares the NUMBERS ONLY in correct order of the Four Horses you select

LINCOLN HORSES (ALL in RUN or NOT)

1 ASTUROSE	16 GOLDSBOROUGH	31 ROMANO
2 AVOCADO	17 GRAZING	32 ROYAL TARA
3 BOLD STREET	18 HAPPY BREED	33 SEA SHAN
4 BRIGHT PAUL	19 I WILL	34 SIGNAL MAN
5 CADWALLADER	20 JOAN'S STAR	35 SPECIALITY
6 CHUBBY	21 LION'S SHARE	36 SPEED II
7 COMMISSAR	22 LORD NELSON	37 SPURNED
8 CRAIGY LLYN	23 MINSTER LOVELL	38 STAR SIGNAL
9 CROWN FLATTS	24 PATCHOULY	39 TETRASHAN
10 DENNY DOR	25 PHILADELPHE II	40 TOWER KNOWE
11 DORRAR	26 PERSIAN BOOK	41 TRAVELLER
12 DRAKRAR	27 PORTMANTEAU	42 WATERSPOUT
13 EVIPAN	28 PRIDE OF THE PRAIRIE	43 WINDSOR HAZE
14 FAIR JUDGEMENT	29 QUEUE UP	44 YELLOW IDOL
15 GARTER BLUE	30 RED PIPPIN	45 YOUNG STRATFORD

The horses listed are those in the Race at the time of going to press. Refer to the list of probable runners in the newspapers before sending in your forecast.

INSTRUCTIONS AND CONDITIONS OF ENTRY OVERLEAF

A FOOTBALL POOL COUPON

In the 1d. Points column competitors score 1 point for every home win they forecast correctly, 2 for an away win, and 3 for a draw. In the Results column they gain one mark for every correct forecast. The right-hand column is a horse-racing pool on the result of the Lincolnshire Handicap

The first football pool in England was organized in Birmingham in 1922. For some years after this the development was slow, and it was not until the 1930's that pools became popular all over the country. To-day they are filled in weekly by nearly ten million people. In 1934 the total turnover of all football pool firms in Great Britain was £8 million; in the 1936–7 football season the total had risen to £44 million, while in 1946–7 the very large figure of £75 million was reached. Probably much of the remarkable popularity of football pools is due to the fact that it allows family gambling. The coupon is filled in at home and all the family can gather round and give advice.

In accordance with the various gambling Acts which prohibit cash betting and gambling, all football pool gambling has to be on a credit basis. This means that the first completed coupon sent in must be unaccompanied by any cash, postal order, or cheque; after the first week each coupon must be sent with a postal order for the previous week's account.

See also GAMBLING; ASSOCIATION FOOTBALL.

FORFEITS. The origin of this traditional party game is obscure, but it has been played for several hundred years, and is mentioned by Samuel Pepys in his diary. It may have a connexion with popular superstition—the idea that certain actions are unlucky and that the spirits must be propitiated by some kind of penance. There was, for instance, an old belief in some parts of the country that it was unlucky to mention 'water' in a brew-house, and anyone doing so had to atone for it by paying a kind

of forfeit. The   inly a general custom, carried on as late as the 18th century, for people with no legal authority to impose penalties for small offences. These were called 'forfeits', and are probably the direct origin of the game. Barbers, in particular, imposed forfeits on any-one found handling a razor, and sometimes set forth these penalties in verses which they put up in their shops.

A forfeit now means a penalty incurred as part of many different PARTY GAMES (q.v.), and usually paid according to a conventional for-mula. Sometimes it is paid for on the spot, but more often a small article is given up, and the forfeits are then all 'cried' together at the end. One player hides his eyes, while the articles are held up one by one to the accompaniment of:

Here is a thing, and a very pretty thing,
And what shall be done to (or by) the owner of this pretty thing?

The player suggests the penance which the victim must perform. There are three main types: those in which the victim is obliged to show his preference amongst the members of the opposite sex who are present, those in which he must give some sort of performance, and those which play a trick on him by demanding the apparently impossible. A traditional example of the first type is:

Kneel to the prettiest, bow to the wittiest, and kiss the one you love best of all.

Of the second:

Sing in one corner of the room, dance in another, laugh in another, and cry in another.

And of the third:

Bite an inch off the poker.

CRYING THE FORFEITS
From 19th-century book of games, *Aunt Easy's Mirthful Moments*

The object of all of them, of course, is to embarrass the victim as much as possible.

FORTUNE-TELLING. 1. There has never been a time when man has not attempted to read the future. At one time omens and the sayings of soothsayers and fortune-tellers were univer-sally believed in; but to-day there are not many people who take fortune-telling really seriously, just as there are few people who attach real importance to actions that are supposed to be unlucky, such as breaking a mirror or walking under ladders. To the majority such things are a subject for amusement, and fortune-telling survives to-day mainly as entertainment, though it is still practised a good deal and takes many different forms. One type of fortune-telling is based on the idea that the future is foretold by the way such things as tea-leaves or cards happen to fall. Another type, that of palmistry or ASTROLOGY (q.v. Vol. I), assumes that a man's future can be foretold by the study of his hand or by the position of the stars at the date and hour of his birth, both holding that man's fate and character are fundamentally related. A third type is based on the power of a medium to get into touch with supernatural powers, who through him make revelations.

All these forms are very ancient and have been practised for many thousands of years. The study of the occult (the hidden) has always been pursued in oriental countries, and the GYPSIES (q.v. Vol. I), the wandering Orientals of Europe, are traditionally its fortune-tellers. Nowadays, the gypsy card-reader, crystal-gazer, or palmist is invariably to be found at the fair, where, after the traditional ceremony of 'crossing her palm with silver', she will not only foretell the visitor's future, but often also surprise him by an ap-parently intimate knowledge of his past. Some gypsies really do seem to be uncannily gifted; but many of the fair-ground fortune-tellers are not genuine gypsies, and others, though they may be gypsies, base their knowledge of our past on astute guesses and the answers to leading questions, their forecasts of the future following a more or less traditional formula of 'dark strangers', 'voyages over the water', and so on.

2. FORTUNE-TELLING BY CARDS OR TEA-LEAVES. Fortune-telling by cards, or 'carto-mancy', is one of the particular activities of the gypsies. The fortune-teller uses either the familiar playing-cards or the more ancient Tarot

pack (*see* PLAYING CARDS). There are several methods with ordinary playing-cards, sometimes the whole pack, sometimes only those over the number seven being used. Generally the cards, after being shuffled, are cut in some special way by the inquirer (often with the left hand), and then dealt out by the fortune-teller according to the particular formula used. By one method, for instance, the cards are placed in three rows, representing past, present, and future; by another they are placed in a semicircle and read from left to right. Usually the different suits are held to be symbolic—Hearts of love, Diamonds of wealth, Clubs of worldly prosperity, and Spades of impending evil; and in most methods the inquirer is represented by one of the Court cards —the Queen of Hearts or Diamonds representing a fair woman, and the King or Knave of Spades or Clubs a dark man. The other Court cards represent the various characters who appear in his life, and every other card has its own special meaning, the interpretation depending partly on the arrangement. The way in which a card falls (either reversed or the right way round) can modify or even reverse its original meaning. Relationships between the different characters represented by the Court cards are

THE PALM, SHOWING THE MAIN LINES

The mounts are as follows: 1. Jupiter. 2. Saturn. 3. The Sun. 4. Mercury. 5. Mars. 6. Venus. 7. Moon.

indicated usually by whether they fall facing or turned away from each other.

Most cartomancers who use the Tarot pack follow the system devised by Etteilla, a fortune-teller who became famous in Paris during the French Revolution. The pack is divided into twenty-two Major Keys—the 'atouts' or 'tarots', emblem pictures representing such things as Justice or Death; and fifty-six Minor Keys—the remaining cards, which are numbered and grouped in suits much as our own pack is. The suits are again symbolic—Money (Diamonds) represents enterprise; Cups (Hearts), love; Swords (Spades), misfortune; and Batons (Clubs), interest. Of the Court cards, the King represents man (also the divine world), the Queen represents woman (the human world), the Knight, youth (the material world), and the Knave, childhood (the transition or passing on of life). The other cards are divided up similarly --1, 2, 3 belong to man, 4, 5, 6 to woman, 7, 8, 9 to youth, and 10 to childhood. Sometimes the cards are laid out in complicated patterns, sometimes they are placed in three rows, the lowest line relating to the inquirer's material needs, the second to his thoughts, the top to the spiritual side of his life. The Tarots can, like ordinary cards, be used to tell past, present, or future, to answer a question, or to say whether or not a wish is to be granted.

Tea-cup reading, like cartomancy, depends on symbolism. The cup is turned round three times and then overturned in the saucer, the fortune-teller then reading the 'pictures' which are formed by the grouping of the tea-leaves, each picture having its own meaning. Birds, for instance, are held to mean messages, and a butterfly near the rim of the cup, a flirtation. The pictures, like the cards, are, of course, read in conjunction with one another.

3. PALMISTRY. 'Chiromancy', or the art of reading hands, is very ancient. It was practised among the Hindus, Chinese, Egyptians, and Greeks; and among the first books printed in Europe after the invention of printing are to be found treatises on chiromancy. Palmists interpret character and foretell the main events of a man's life by the shape and colour of his hands, and above all by the lines and mounts on the palm. The mounts lie on the palm and at the base of the fingers (see diagram), the interpretation depending upon how prominent they are. The mount of Venus relates to love, Jupiter to pride,
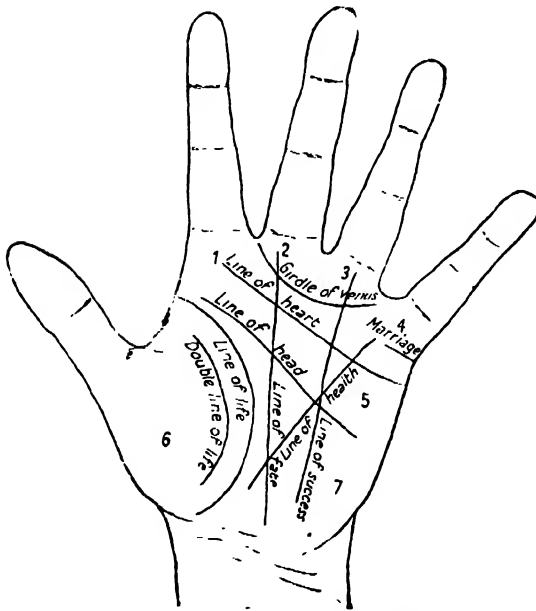
THE FORTUNE TELLER
Painting by Pietro Longhi, 1702–85
National Gallery

Saturn to wisdom, the Sun to success, Mercury to love of knowledge, Mars to courage, the Moon to morality. Each of the main lines on the hand has its own significance—there is a line of Life, indicating the length of life; the line of Head, indicating the intellectual powers; the line of Heart relating to the love of others; and lines of Fate, Success, Health, Marriage, and so on (see diagram). The two hands are compared, the left being supposed to show inherited tendencies, the right cultivated qualities.

4. MEDIUMISTIC FORTUNE-TELLING. Crystal-gazing, which depends on a belief in mediumistic powers, was practised in ancient times in the East, and, later, in Greece and Rome. It is common, also, among primitive tribes. In ancient times, the surface of liquids or any other clear depth was used as a crystal, and in the Middle Ages a mirror was used. The belief that visions could be seen in a mirror in this way is found in certain fairy-tales, such as *Beauty and the Beast*. People with the ability to see visions in a crystal are known as 'scryers', and the quality of their visions is said to vary: usually the crystal grows milky or misty, and sometimes black and white still pictures emerge; more gifted scryers hold that they can see coloured moving pictures; while the most gifted say that the crystal disappears before their eyes and that they appear to be actually witnessing the scene it reveals. The crystal-gazer does not go into a trance but can, it is claimed, gaze and converse at the same time; he can even put the crystal aside for some time and still see the vision on returning to it. It is impossible to tell what is really seen by scryers: the effect of staring fixedly at the same spot for a long time may well produce some form of hallucination.

Another equally ancient form of fortune-telling of the mediumistic kind is automatic writing, common especially in the East. Prophetic words are written, it is claimed, by a supernatural agent, the medium merely holding the instrument. This survives to-day in the form of the Planchette, a small, usually heart-shaped board supported by two small wheels and a pencil. The medium rests his fingers lightly on the board, and the pencil will write, it is claimed, without conscious direction. The custom is usually to ask the Planchette questions, which it is supposed to answer. A Planchette does not require a professional fortune-teller, but supposedly responds equally well to anyone. It therefore makes a popular amusement at parties. Table-turning works on the same principle.

FOX HUNTING. This field sport consists of the hunting of the wild red Fox (q.v. Vol. II) by a pack of foxhounds controlled by the mounted Hunt staff. These are, as a rule, followed by spectators on horseback. It is uncertain when the first pack of foxhounds was established. In 1875 a Master of the Cheshire Hunt possessed a hunting horn thus inscribed: 'Thomas Boothby Esq., Tooley Hall, Leicester. With this horn he hunted the first pack of foxhounds then in England fifty-five years. Born 1677. Died 1752.' Another authority says that it was not till about 1750 that hounds were kept solely for fox hunting though, of course, foxes had been hunted much earlier in spite of the sport being considered inferior.

There are now just on 200 Hunts in Great Britain. Each Hunt elects a Master (M.F.H., or Master of Foxhounds), who manages most of its affairs. The Master must generally be a man of means, for though the followers contribute towards the expenses of hunting the country, their contributions seldom meet more than half the Master's expenses. These expenses include the wages to the huntsman (if the Master does not hunt the hounds himself), the whippers-in (the huntsman's assistants), and the grooms and kennelmen; the cost of forage for the horses and flesh or meal for the hounds; the upkeep of cars and lorries; and the purchase of saddlery for the horses and clothes for the servants.

A Hunt has well defined boundaries, and the Master can only look, or 'draw', for a fox within the boundaries of his Hunt, though he may follow one over its boundary. Whether the hounds go out hunting two, three, or four days a week depends upon the size of the Hunt's country as well as the amount of money available.

To understand the science of fox hunting some knowledge of the habits of the fox is essential. The scent, the characteristic of a fox of most interest to hunting people, is given off in the form of a vapour cloud from scent glands in various parts of its body. As the fox moves about the country, it leaves a tiny trail of invisible scent droplets, and it is that which is followed by the hounds. A fox's scent, though very distinct, is comparatively weak, and can seldom be hunted when it is more than 30 minutes old; even the

wonderfully sensitive noses of the hounds find it difficult to follow it at all save under perfect conditions. A quite fresh scent, however, is strong enough to be easily picked up by a human being who happens to walk across it. Scent is affected a great deal by weather—barometric pressure, sunlight, frost, and rain. Then, a fox's scent is easily masked, and a freshly manured field, a field across which cattle, sheep, or horses have recently passed, a tarred road, all make it difficult or impossible for hounds to follow the scent trail. It must be remembered that foxhounds hunt only by scent, seldom, if ever, seeing the fox which they hunt; whereas greyhounds hunt entirely by sight and never by scent (see COURSING). Under the most favourable conditions hounds rarely kill more than one fox for every seven which they hunt, and the average for the country as a whole is nearer one fox killed for ten hunted.

A hound is a little slower than a fox, but has rather better stamina, and it is only because of this that he can kill a fox at all. The stamina of a hound is amazing: it has been reckoned that on an average hunting day a foxhound will cover between 50 and 100 miles, some of it at a gallop, much of it over rough country and through woods and fences. Next to his stamina, a hound's most valuable asset is his 'nose'—by which is meant not only his ability to smell a fox's scent but his ability to understand what he has smelled. For example, a hound should be able to tell whether he is running the scent in the direction the fox was going, or back to where it has come from; and he should know the scent of one fox from that of another, and not be tempted to change from a hunted to a fresh fox. A third characteristic of a hound is 'tongue'. Unless a hound barks or, as it is called, 'throws his tongue' when he strikes the line of a fox, he is almost certain to start galloping off alone after that fox, neither the rest of the pack nor the huntsman and the followers knowing that he has gone. A hound must 'speak' when he is on the line of a fox, but he must never speak save when he is on it.

Hounds start hunting when they are about 18 months old, and may carry on for five, six, or even more seasons. They are nowadays fed mostly on horsemeat or the flesh of cattle unfit for human consumption. This may be fed raw, or it may be boiled and mixed with some form of cereal food and vegetables—for instance, oatmeal porridge and chopped cabbage or nettles.

In early September, as soon as the corn is cut, cub-hunting begins, and the young hounds are taught to hunt and to come to their huntsman's voice and horn. At this time of year the ground is too hard, and the fences too 'blind', or full of leaf, to make it safe to gallop on horseback across country. So, as far as possible, only cubs —young foxes— are hunted, for these will not go far from their home coverts. The hunting

THE COTTESMORE HOUNDS MOVING OFF TO DRAW A COVERT NEAR OAKHAM
W. W. Rouch & Co.

season continues until March or April, when the breeding season of the foxes and the needs of agriculture bring it to a close.

The mounted Hunt staff consists of a huntsman, who may be the Master or a paid servant, and one, or sometimes two, whippers-in. The huntsman is in control of the pack, which draws coverts for a fox at his bidding. If the fox's scent is obliterated and the hounds are unable to recover it by their own unaided efforts, he will 'cast' them in the direction in which he thinks the fox is mostly likely to have gone. The huntsman is also responsible for the care of the hounds in kennels. The whippers-in keep the pack together; they help the huntsman to get across country by opening gates for him and so on; and they try to get a 'view' of the hunted fox, and so tell the huntsman where it has gone.

Hunting a pack of hounds is both a science and an art. A huntsman must know much of the ways of the fox; he must have in his mind a very accurate and detailed picture of the country, knowing where all the earths are, where are the 'rack-ways', or runs which foxes often use through fences; which lands carry a good scent and which do not. Then, he must have the art of making a pack of hounds work for him, which they will only do if they love him, and if he never misleads them: if you want to get some idea of the general worth of a huntsman, watch how quickly and willingly his hounds go to him when he calls or whistles to them. He knows each hound not only by sight and by name, but by character: he knows the note of its tongue; its weaknesses and its virtues: he knows that Barmaid is apt to 'skirt' or cut corners when she is tired; that Noble has a wonderful power of hunting along a road; that Trinket will sometimes 'speak' to a hare, but that Vision never will; and so on.

The 'Field', the followers of a Hunt, whether mounted, on foot, or in cars, play no part in the hunting of the fox, but are mere spectators. Indeed, their presence helps the fox considerably; for if the latter makes a sudden turn, the Field may inadvertently cross its line and 'foil' it, or obliterate it with the stronger smell of their horses. Still, it is for the amusement of the Field that the hounds hunt, and in most countries, in peace-time, sport is planned more with a view to giving the mounted Field a good ride over the best of the country than to killing foxes, though in times of war and of food shortage every opportunity is taken to kill a fox, even at the expense of the Field's sport.

There are certainly few things quite as exciting and thrilling as a gallop behind hounds on a good horse over a good country. The hunting 'countries' of Britain vary enormously in their ability to provide entertainment for the riding members of the Field. The cream is in and around Leicestershire, where the old grass fields are always sound, and where the unwired fences can be jumped anywhere by a good horse, nowhere by a bad one. In other countries the fences may be fair enough, but the land may be ploughed—and galloping across ploughed fields is far more tiring for a horse than galloping across grass ones. Again in other countries hounds may be almost always in great woodlands, where there is no jumping and but little galloping. In such countries the Field use their horses solely as pleasant conveyances which enable them to see as much as possible of the work of the hounds and the huntsman. Britons have taken their love of fox hunting into many parts of the world, and there are many packs of hounds in India, America, and Canada, as well as a few in Africa, Australia, and New Zealand.

See also HUNTING, HISTORY OF; DRAG HUNTING; DOGS, BREEDS OF.

FOXTROT, see BALLROOM-DANCING.

G

GAMBLING originally meant the playing of games of chance for money. The word is now in general use to describe any undertaking, from betting on horses to speculation on the Stock Exchange, in which chance or accident greatly affects the result, and which is undertaken with the consciousness of risk.

The ancient Egyptians, Greeks, and Romans were all great gamblers, and laws to restrict or prohibit gambling had little effect. The great Roman historian Tacitus describes the gambling fever of the ancient Germans who, having lost all their possessions playing with dice, would gamble themselves into slavery. Instances are recorded of Chinese gamblers who, having lost everything else, would stake their right hand and, having lost, cut it off. The gambling instinct is found equally among primitive people: the natives of Sudan and West Africa, having gambled away their wives and children, would also stake their own liberty.

Nearly every form of game and sport has somewhere and at sometime been used as a medium for gambling. DICE and CARD GAMES (qq.v.) have been associated with gambling since the earliest times: LOTTERIES (q.v.) are referred to in the Old Testament; betting on horse races is also a very ancient practice, and is certainly the form of gambling most widespread throughout the world to-day. Fashions in gambling change: until the middle of the 19th century there was a great deal of gambling on cricket; now there is probably none. Now thousands of
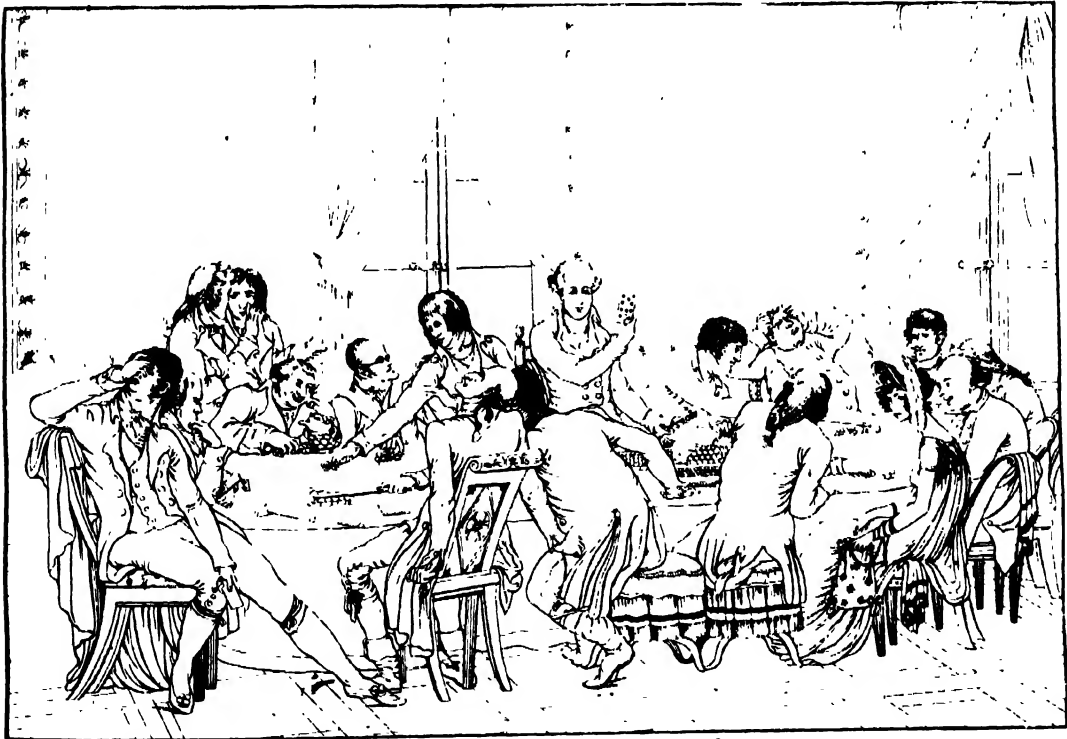
GAMBLING ABOUT 1800. LOSERS' COUNTERS ARE BEING RAKED IN BY THE 'BANKERS'
From a French engraving by Pierre Guérin (1774-1833)

people gamble on football matches and horse races which they never see. Gambling on FOOT-BALL POOLS (q.v.) is on a considerably smaller scale than on racing, though very large prizes are occasionally won by the fortunate. Over £70,000 has been won in return for a sixpenny stake on the pools, and most people who fill in their weekly coupon dream optimistically of how they will spend their fortune when their turn comes. BETTING (q.v.) on horse racing is heavy in many countries; and a great deal of money changes hands also as a result of gambling in foreign CASINOS (q.v.). The song about 'The man who broke the bank at Monte Carlo' is very well known; but Monte Carlo has certainly seen more money lost than fortunes made. Though less money is now staked at cards than used to be the case, gambling on card games is still very popular. Chemin de Fer is played in the Casinos of Europe, and games like Brag, Newmarket, Vingt et Un (or Pontoon), and Slippery Sam are played in thousands of homes.

It is probably impossible to collect accurate figures, but the following give a fair picture of how money was spent on gambling in Britain in 1948:

Football pools, £69 millions
Greyhound racing, £210 millions
Horse racing, £350 millions
Other gambling, £21 millions

All these figures show a decline since the end of the war.

Though the whole turnover from gambling has never been greater in Britain than during the last 10 years, the 18th and first half of the 19th centuries are traditionally regarded as the greatest days of gambling in this country. These were the days of the great individual gamblers who won and lost fortunes at cards, dice, and horse races. London clubs, such as Brook's and Almack's, were frequently the scenes of gambling parties which went on all night. Hazard, a dice game, and Faro, a card game (both now illegal), were the favourite games on these occasions. A thousand pounds would be staked on a single card or throw of the dice, and £50,000 and more would be lost in a single night. During a gambling session of this kind towards the end of the 18th century Lord Sandwich invented the sandwich, sending for 'slices of beef placed between pieces of bread' so that he would not have to leave the gaming tables. CHARLES

JAMES FOX (q.v. Vol. V), while a Cabinet Minister, once won £30,000 at Newmarket races. The following account of how Fox spent 4 days in January 1772 shows how a great gambler lived in the great age of gambling. From the evening of Tuesday until 5 p.m. on Wednesday, Fox played Hazard at Almack's: at one stage he had won £12,000, but by the end he had lost £11,000. He made a long speech in Parliament on Thursday, after which he went to White's Club. He stayed up all night at White's, and went to Almack's at 7 a.m. on Friday morning; there he won £6,000, and then he left for Newmarket races in the afternoon.

Few individuals nowadays gamble on this scale, and certainly not at dice or cards. Big gambling in Britain still takes place, however, on horse racing; the owner of the horse winning the Cambridgeshire Handicap in 1948 is believed to have won nearly £150,000 in bets. On the other side of the picture, there are many people in Britain who fall into debt annually through betting more than they can afford on horse and greyhound racing.

Ancient peoples legislated against gambling on the grounds that it corrupted morals and destroyed the military spirit of the people. Later, when it became clear that legislation would never prevent gambling among the ruling classes, the tone of the laws gradually changed. In the Middle Ages legislation was chiefly directed towards preventing the working classes from gambling or playing games when they should have been working. In 1397, for example, the Provost of Paris prohibited the working classes from playing tennis, bowls, dice, cards, or ninepins on working days.

Governments have continued to try to regulate and control gambling by various methods—legislation, exhortation, or taxation. The laws governing gambling vary greatly in different countries. In France the bookmaker's trade is illegal, but public gambling houses where one can play Roulette are permitted. In Holland racecourse betting on the Totalisator is permitted, but only £1 may be staked at a time. Italy runs National Lotteries; and in Sweden all football pools are run by the Government.

There are many complicated laws about gambling in Britain. The law defines gambling games as games which depend wholly on chance, and lists certain games as illegal, including Roulette, Faro, and Hazard. Games such as

Bridge, Whist, and Poker, which are often played for money, are games of skill in which chance only plays a part. Gambling of any kind is prohibited in any public place, except on a racecourse or greyhound racing tracks. No house, building, or 'place' may regularly be used for gambling of any kind; any house that is so used can be raided by the police as a 'Gaming House', and anyone found there may be arrested. Because of this law it is illegal to visit a bookmaker's office to make a bet, though it is legal to make the bet by telephone. Similarly, a football pool office would become a 'Gaming House' if clients were allowed to call and fill in their coupons. All 'off the course' bets on horse and greyhound racing must be credit bets—cash settlements have to be postponed until after the race in question is over. Similarly, money staked on a football pool must not be sent to the Pool Promoters until after the games have been played.

Actions in Court to recover betting and other gambling debts were at one time possible in England under the Common Law. In 1835 the first of a series of Gaming Acts established the fact that gambling debts of any kind are not recognized as legal liabilities. People who do not wish to pay a bookmaker can claim exemption under the Gaming Act. The law about gambling debts has been complicated by the establishment of the Racecourse Betting Control Board in 1928, for the Gaming Acts do not apply to debts to the Board incurred by betting on the Totalisator, and legally these must be paid.

For many years the Governments of Britain refrained from taxing gambling in any way, chiefly on the grounds that gambling was a wicked activity, and taxing it suggested Government recognition. In 1926, however, a short-lived attempt was made to tax bets made with bookmakers. In the 1947 Budget, as a result of the enormous increase in gambling before and during the Second World War, taxes were imposed on all bets made at greyhound racetracks and on all prizes won on football pools. These taxes have assisted the revenue considerably (the pools tax raised over £10 million during the first year), and it seems likely that the taxation of gambling will increase.

See also BETTING; CARD GAMES; CASINOS; FOOTBALL POOLS; HORSE RACING; GREYHOUND RACING.

GAME RESERVES, see NATIONAL PARKS.

GAME SHOOTING. 1. PRACTICE.

Game, as defined by the Game Act of 1831, comprises hares, grouse, and blackgame, heath or moor game, partridges, pheasants, and bustards. To this list the Poaching Prevention Act of 1862, designed to bring illicit traffic in all fur and feather within the law, added rabbits, snipe, and woodcock, quail and landrail, and the eggs of grouse, partridges, and pheasants. The Game Licence Act of 1860 compels everyone pursuing snipe and woodcock, quail and landrail, as well as the birds listed in the 1831 Act, to take out a Game Licence, which costs £3 and runs from August 1st in any year until the 31st of July following. All species of wild geese and surface-feeding or diving ducks may be shot by holders of a 10s. gun licence (see DUCK SHOOTING).

The principles of all game shooting are the same, but its technique varies with the habit and habitation of the quarry. Two methods are employed in shooting: one is to 'walk birds up', either alone or in line, and with or without dogs; the other is to 'drive them' with beaters. Tactics

GAME SHOOTING. A RETRIEVER DOG HAS JUST BROUGHT IN A PHEASANT

Picture Post

SNIPE SHOOTING
From a 19th-century coloured engraving

on open moors naturally differ from those suit-
able to enclosed country, as the methods of
shooting in woodlands differ from those used on
fens and marshlands. Grouse, for example, are
shot over setters and pointers which, ranging
ahead of the guns, 'quarter' the ground. Usually
two dogs work with each pair of guns, one
'backing' the other, until the leading dog, wind-
ing (or scenting) birds, slows up and comes to a
still set, enabling the shooters to come up on
either side. The dog is then gently urged for-
ward, and the covey is flushed (or put up)
within effective range. When cover was abun-
dant and farmers reaped with sickle and scythe,
similar tactics were used in partridge shooting;
but with the modern agricultural system, there
is so little cover that dogs became ineffective.
Retrievers, or spaniels, however, are still essen-
tial for bringing in the birds which might other-
wise fall into thick cover, swamp, or water, and
be lost. Nowadays we walk up to partridges in
line (spacing guns about 25 yards apart) for just
so long as the birds will lie reasonably close.
Because there is so little cover (stubble being
ploughed up immediately after harvest and root
crops lifted early), partridges tend to 'wildness'
almost from the time shooting begins, and
usually it becomes necessary to drive them before
September is very far advanced.

Grouse, partridges, and pheasants are driven
according to different methods; but the object
of all driving is to push the birds forward over
a strictly limited front. The siting of butts on
an open grouse moor or the skilful selection of
gun-stands for partridge shooting is an important
matter. Guns must be spaced near enough to
one another to deal with coveys flying midway
between them. One of the arts of driving is to
ensure that birds scattered over a wide front can
be brought in to travel right over the firing line.
This is not so difficult in covert shooting of
pheasants. Here the test of a good keeper is to
make his birds rise in twos and threes, and not
in one mass towards the end of a beat. This
depends partly on his skilful selection of flushing
points and partly on his direction of the beaters.
They should move slowly and steadily; they
must keep in line and keep silent, and they
should immediately obey the keeper's whistle
signals to halt. With birds running on in front
into the flushing area, the pace slackens to a
standstill; each flushing-point is prodded out,
and a steady stream of birds ensues.

The direction of the beat should be arranged
according to the direction of the wind. Very often
in grouse and partridge driving the beating-line
must be crescent-shaped, the horns forward,
in order to force birds towards the centre. The

best beate...　　　　　　　　:d as flankers, where they will be well forward, and must show their flags at the right moment to prevent birds breaking back and sideways. Countless coveys in thick cover may be left behind if driving is hurried; silence and strict discipline are essential.

Whether walking game in line or driving, it is essential for safety that everyone keeps his place strictly in the line. In a butt, at a stand, or in cover, the sportsman must mark carefully the position of his neighbours, right and left; and know what is behind the hedge or belt of trees in front, especially when the leaf is on. No one should fire unless he knows these things. Neither the farmer nor his cow nor the host's retriever will appreciate a dose of lead, even at long range. A very low skimming bird should never be shot at on account of the beaters in front, nor in any circumstances, whether walking or standing, should the gun be swung down the line. Experience soon teaches the safety angle; but a good general rule for the novice is never to fire at an acuter angle with his next-door gun than 45°, and never to take low birds which, rising, will make a better shot for a neighbouring gun. Next to safety, silence is golden in the shooting field. Birds are acute of hearing, and more are lost through the uplifting of the human voice than is generally recognized.

2. HISTORY. Game shooting, compared with many sports, naturally has a comparatively short history, for it has been dependent on the invention of a suitable gun (*see* SPORTING GUNS AND RIFLES). There is a hunting arquebus of Henry VIII still preserved in the Tower of London; and Gervase Markham, in 1621, gives a description of the weapon of that time, with 'a six foote barrel which may serve for any fowle great or little'. But it seems ridiculous

PARTRIDGE SHOOTING OVER ROOTS NEAR EWES IN SUSSEX
The Times

to give these weapons, so little used, the status of sporting guns at a time when falcons were everywhere employed in hunting game (*see* FALCONRY).

The French were the pioneers of shot guns and game shooting, and in the 16th and 17th centuries St. Etienne was the sporting arsenal. With the invention of the flint-lock, introduced in Spain in 1630, but not used in Britain till later, game shooting may be said to have begun; but before the middle of the 18th century it was still considered a distinctly remarkable feat to kill game in flight.

Our great-great-grandfathers were content with modest spoils: in fact Gilbert WHITE of Selborne (q.v. Vol. V) protested against the 'unreasonable sportsmen who killed in 1740 and 1741 as many as twenty brace of partridges in Wolmer Forest'. (What would he have thought of the Maharajah Dhuleep Singh who, at Elveden in 1885, killed 780 partridges with his own gun in a single day!) The means employed in those early days were very crude. For days before a shoot, a veritable army with nets and dogs would surround a tract of country. Gradually closing in, they drove everything before them into a circumscribed area, subdivisions of which were then enclosed by high nets. The shooters, provided with six guns or more apiece, then entered the precincts and proceeded to slay every living creature which escaped the nets.

With the 19th century began an era of progress in every phase of shooting. In 1807 the percussion cap was invented, and in the early 1820's the very much lighter and more efficient double-barrelled gun was introduced. The preservation and rearing of game became much better understood, and, in consequence, the supply greatly increased. In 1831 the Game Act crystallized the sporting code.

It was not until the middle of the century that grouse shooting achieved prominence, principally because the Highlands of Scotland had been inaccessible to all but the boldest spirits. In the 1850's, however, the Highland railways were opened, and Queen Victoria began her annual visit to Balmoral. Scotland, therefore, became the fashionable holiday resort for the wealthy. In consequence, whereas 224 brace of grouse shot between the 12th and 30th of August was a record for Britain in 1849, 23 years later, in 1872, 2,626 grouse were killed in one single

day's grouse driving at High Force grouse moor.

In early days partridges were almost invariably shot over dogs, who put them up out of the thick undergrowth. By this method, even where birds were plentiful, bags were generally small, 40 brace being considered a good day's shooting. In 1845 the method of driving partridges was started, and bags greatly increased—in 1929, for instance, 9,360 partridges fell on a Hampshire shoot in 21 consecutive days. When artificial game-rearing was in its infancy more than 100 years ago, pheasants were mostly shot over pointers, or 'dug out' by teams of spaniels. The modern method of covert shooting was adopted gradually, beaters beginning to replace dogs only towards the middle of the last century. In 1845 a record bag of 1,000 pheasants was made in one day; in 1903 a 3-day shoot yielded 9,197 birds.

By the end of the 19th century the sporting gun had reached the height of its efficiency—indeed, except for minor improvements in mechanism, guns have not changed much in the last 50 years. The last decades of the 19th century and the beginning of the 20th century up to the First World War were the times of great shoots and of great shooting names such as Lord Ripon, Lord Walsingham, the Maharajah Dhuleep Singh, Sir Frederick Milbank, and Mr. Rimmington Wilson. Lord Ripon, for instance, shooting with three guns supplied to him in quick succession by his loader, would often shoot five out of a covey of grouse driven over him. He would shoot one at a long distance with the first gun, two with the next gun in front of him, and two more with the third gun behind him as the grouse flew away. Most sportsmen think they have done well if they shoot two birds—one in front and one behind.

Since the two World Wars few people can afford the expense of these great luxury shoots with all their paraphernalia of gamekeepers, loaders, and beaters, dependent on all the previous work of game-rearing and preserving. The shooting which most people now enjoy is a much more informal rough shooting, where the sportsman may end his day with a mixed bag of whatever he and his dog have been successful in putting up.

See also SPORTING GUNS AND RIFLES; DUCK SHOOTING; BIG-GAME HUNTING; DOGS, BREEDS OF, Section 3.

See also Vol. II: GROUSE; PARTRIDGES; PHEASANTS.

GAMES, *see* BOARD GAMES; CARD GAMES; HIDING GAMES; GLADIATORIAL GAMES; HIGHLAND GAMES; OLYMPIC GAMES; PAPER GAMES; PARTY GAMES; 'PUB' GAMES; SINGING GAMES; STREET GAMES; TRACKING GAMES.

GARDENS, *see* BOTANICAL GARDENS; PARKS AND GARDENS.

GENERAL STUD BOOK. Every country in the world where there is organized racing and breeding of horses has its own stud book in which the family histories of the horses are recorded. In Britain this is known as the General Stud Book, and it is the oldest national register. It is the property of Messrs. Weatherby and Sons, Keepers of the Match Book and Secretaries to the Jockey Club. It is controlled, edited, and published by that firm, who are also, on behalf of the Jockey Club, publishers of the *Racing Calendar*. The General Stud Book—'The Book', as it is called—is the absolute property of Messrs. Weatherby and Sons and no amendment can be made without their consent. They could reject proposals by the Jockey Club or any other body; but in practice agreement is always reached after discussion with the Jockey Club.

The thoroughbred horse of English origin was evolved in the last years of the 18th century by crossing the breed known in England since the reign of Henry VIII with Turks, Barbs, and Arabians. For more than 200 years records have been kept of public tests of every thoroughbred on the racecourse, and preserved with them are the pedigrees of the earliest known foundation stock. In 1791 Messrs. Weatherby incorporated the essence of these records for the previous 54 years, and the records of ancestry which survived from an earlier date, to produce Volume One of the General Stud Book.

In 1913 it was ruled that horses and mares which could not be traced in every line of ancestry, no matter how remote, to horses and mares in Volume One or to a few mares included for the first time in Volume Two, were not eligible for the General Stud Book, and were not, therefore, entitled to be described as thoroughbred. Inclusion of horses in the General Stud Book is not a guarantee of ability on the racecourse or at stud: it is only a warranty of the purest definable ancestry. The inclusion of a horse in the General Stud Book, therefore, does not necessarily make it a good racehorse; in fact,

many of the purest thoroughbreds have been failures, and many half-bred horses have been winners.

See also HORSE RACING; HORSES.

GIRL GUIDES. The Girl Guides Association, founded in 1911 by Lord Baden-Powell, is an organization for girls parallel to the BOY SCOUTS Association (q.v.), with which it works in close contact. It is divided into three branches—Brownies (age 7½–11), Guides (age 11–16), and Rangers (age 16–21). The adult leaders are known as Guiders, and girls between the ages of 16 and 21 who are training to be Guiders are called Cadets. The administration of the movement is in the hands of its Commissioners, who are appointed by Imperial Headquarters, there being Commissioners for each District, Division, County, and Country. They act as a direct link between the Guides themselves and the Executive Committee of the Council at Girl Guide Headquarters. The object of Guiding is to teach resource, self-reliance, and practical ability by means of camping and out-of-door activities. Homecraft and the elements of leadership are

SEA RANGERS PRACTISING SEMAPHORE
S. T. Clarke

GIRL GUIDES AT CAMP
T. Hollingsworth

catered for by a series of graded tests and proficiency badges.

Brownies, the youngest group, are divided into 'Packs' of 18 24 children, under the leadership of two adult leaders, known to the Brownies as 'Brown Owl' and 'Tawny Owl'. A Pack consists of three or four 'Sixes', each with its own Brownie leader or 'Sixer'. The Six System forms the basis on which the Patrol System is built.

There are between twelve and thirty-six girls in a Guide company, divided into Patrols, each Patrol of six or eight girls working as a unit with a girl leader appointed by the Patrol. When a girl first joins a Guide company she has to pass the Tenderfoot Test, which consists of knowing the composition of the Union Jack and some of the stories connected with it, in learning various knots and their uses, and in knowing the Guide signs and salute. This, after a month's attendance, qualifies her for enrolment as a Girl Guide. At the enrolment ceremony she makes the Guide Promise: 'On my honour, I promise that I will do my best to do my duty to God and the Queen, to help other people at all times, and to obey the Guide Law.' Then she gives the Guide salute, made by raising three fingers of the right hand. She is then entitled to wear the trefoil-shaped Guide badge.

The Guide Law, which is the basis of her training as a Guide, is as follows:

1. A Guide's honour is to be trusted.
2. A Guide is loyal.
3. A Guide's duty is to be useful and to help others.
4. A Guide is a friend to all, and a sister to every other Guide.
5. A Guide is courteous.
6. A Guide is a friend to animals.
7. A Guide obeys orders.
8. A Guide smiles and sings under all difficulties.
9. A Guide is thrifty.
10. A Guide is pure in thought, word, and deed.

The next stage after the Tenderfoot Test is the Second Class Test (including such subjects as first aid, outdoor discovery, and knotting). Having passed this, the Guide can go on to develop her individual interests and talents through the Proficiency Badge syllabus which

covers a wide variety of subjects ranging from Astronomer to Skater, and Pathfinder to Lacemaker. At the same time she can be working towards the First Class Test, which is wider in scope, and is tested on a higher standard than the Second Class. This test includes camping, swimming, a thorough knowledge of the Guide's own neighbourhood, cookery, needlework, and child care. This in turn leads to the Queen's Guide award, the highest award for which Guides in this age-group can qualify. To be a Queen's Guide, the Guide must hold the Little House and Woodcraft emblem (these represent six homecraft and four outdoor badges respectively) and have done at least 12 weeks' regular service for her local community and for an overseas community. Finally, she takes a 'Be Prepared' test to test her resourcefulnes and ability to deal with unfamiliar or emergency conditions. The Queen's Guide test is intended primarily as a test of character, a Queen's Guide being able to represent the Guide movement with credit on any occasion.

The Ranger programme is planned to appeal to the adolescent's spirit of adventure, and includes campcraft, homecraft, civics, and practical service for others. It also gives opportunities for specializing in a variety of subjects. There are three sections in the Ranger Branch —for Land, Sea, and Air Rangers. Land Rangers concentrate on an all-round and many-sided training; Sea Rangers get special nautical experience by practising seamanship on rivers, lakes, or on the sea; Air Rangers combine with the usual Ranger activities a training in subjects connected with flying and gliding in preparation for actual air experience.

In addition to the ordinary companies there are Extension Companies or Packs for girls who are blind, deaf, crippled, or invalids, and also for high-grade mental defectives. Whether in hospital, institution, or home, they follow the normal training as nearly as possible, but with tests adapted, where necessary, to their needs. Lone Companies are formed for Guides and Rangers who are unable to join ordinary companies because of their employment or because of the place in which they live, and their training is carried out by correspondence. There is also an Auxiliary Section of the movement, which is open, under certain conditions, to girls in approved schools under the Home Office, and in Homes and Schools for the guidance and training of girls taken from undesirable surroundings.

Every effort is made for such girls to continue as Guides when they leave school or home.

Membership of the Guide Movement in Great Britain now stands at nearly half a million, with a world membership of $2\frac{1}{2}$ million. Guiding has spread to every part of the world; there are twenty-six countries which are full members of the World Association of Girl Guides and Girl Scouts, and five which are Tenderfoot members. There are very close links between the Guides of different nations, and international camps, conferences, and exchange visits are arranged frequently for all branches.

GIRLS' FRIENDLY SOCIETY, *see* CLUBS, BOYS' AND GIRLS'.

GIRLS' LIFE BRIGADE, *see* CLUBS, BOYS' AND GIRLS'.

GLADIATORIAL GAMES. The word 'games' is used in this sense to mean public contests in the same way as we speak of HIGHLAND GAMES and the OLYMPIC GAMES (qq.v.). Gladiatorial games were contests between professional fighters, called gladiators, who were trained in state or privately owned schools to fight each other for

GLADIATORS
A Greek sculpture from the Uffizi Gallery, Florence

the amusement of the Roman public. The games took place in specially constructed arenas surrounded by tiers of seats which could accommodate 20,000 or more spectators. The first gladiatorial games are said to have been held in Rome in 264 B.C., and soon their popularity spread all over the Roman world except in Greece, where they found no favour, being quite contrary to the Greek idea of an athletic meeting.

Gladiators were originally drawn from prisoners of war and condemned criminals; but later, men of high rank sometimes voluntarily joined a gladiatorial school for the love of fighting. It was even known for women to fight in the arena: on one occasion in A.D. 90 the Emperor Domitian arranged a battle between women and dwarfs. Many gladiators, often men of superb physique, enjoyed great popularity during their career and received gifts of armour and money. In certain cases they were presented with a wooden sword and discharged from further service.

The games began with a parade of the gladiators in the arena. Then they stood below the box of the emperor or the giver of the games and gave their salute—'We, who are about to die, salute you'. There followed a sham battle with wooden swords. Then the serious contests began. The programmes, which were announced before the games, were carefully arranged to provide variety. Normally, gladiators fought in the armour and with the weapons of their own country: Thracians fought with curved daggers and small, round bucklers, and Samnites with short swords, helmets, and long shields. One of the most popular contests was between the 'Secutor' (pursuer) who was fully armed, and the 'Retiarius' (net-thrower) who wore a tunic and carried a net with which he tried to entrap his opponent. If he succeeded, he dispatched him with a trident which he carried in his belt. When a gladiator was at the mercy of his opponent, he appealed to the audience, with whom rested the verdict of life or death. If they turned down their thumbs, he was killed at once; if they waved handkerchiefs, he lived to fight again.

As well as public fights between gladiators, the hunting and fighting of animals, especially elephants and lions, took place in the arena. These were called the *Venationes*. They were very popular during the 1st century B.C., when vast numbers of animals were slaughtered; but their brutality shocked even a Roman audience.

All forms of gladiatorial contests were prohibited by the Emperor Constantine in A.D. 325 because of their brutality. But they did not, in fact, come to an end until A.D. 404, when a monk, Telemachus, rushed into the arena to separate two gladiators. The spectators were furious and stoned the monk to death; but the Emperor Honorius declared him a martyr, and finally put an end to the games.

See also Vol. I: ROMAN CIVILIZATION.

GLIDING. A Glider is a motorless aircraft with fixed wings. It was the first type of flying machine heavier than air to achieve success. There were many attempts to fly with crude gliders; but Otto Lilienthal, who experimented with them in Germany between 1891 and 1896, was the first to do so under full control. Placing himself between the wings, he used to run down a hill-side against the wind, leap into the air, and descend gently to the bottom of the slope, swinging his legs and body to maintain balance. Similar controlled gliding descents were made in England by Percy Pilcher between 1895 and 1899, and by Octave Chanute and his assistants in the United States of America in 1896. All these experimenters hoped to imitate the soaring flight of birds; for it had been observed that the larger birds were often able to gain height without effort by holding their wings rigidly outstretched.

The first prolonged soaring flight was made on 24th October 1911, by Orville Wright, who, with his brother Wilbur, had invented the aeroplane 8 years earlier. Flying a glider with similar controls to those of his aeroplane, he stayed up for $9\frac{3}{4}$ minutes over a sandhill on the coast of North Carolina, U.S.A. For the next 10 years the development of the aeroplane claimed so much attention that the ideal of soaring like the birds was almost forgotten. Then, after the First World War, a small group of Germans decided to take up soaring because of the treaty restrictions on aeroplanes. They succeeded so well that on 24th August 1922 F. H. Hentzen kept a glider air-borne for 3 hours and landed above his starting-point on the Wasserkuppe mountain in central Germany.

These soaring flights are explained by the fact that the glider flies where the wind is being deflected upwards over a hill. Every glider moves on a downward path in relation to the air surrounding it; but if this air is rising just as fast as the glider is sinking through it, the

FOX HUNTING.

After a painting by Henry Alken
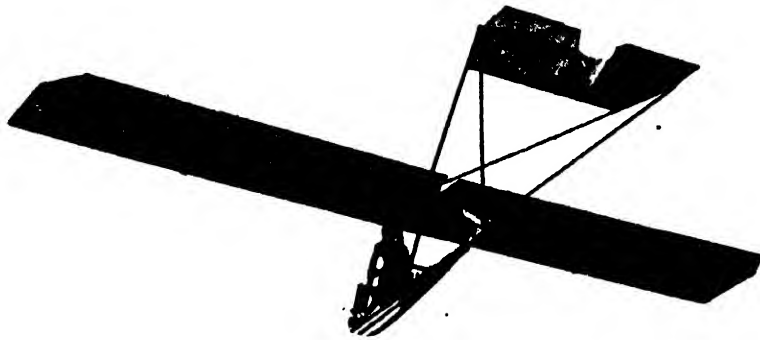
PRIMARY TRAINING GLIDER IN FLIGHT OVER DUNSTABLE DOWNS, WHERE THE LONDON GLIDING CLUB MEETS.   *A. E. Slater*

glider will get no nearer to the ground. If the air is rising faster, the glider will climb. Soaring flights are now no longer confined to the windward slopes of hills. On sunny days air often rises from heated ground in a narrow column, called a 'thermal', and gliders, like birds, can gain height by flying in circles to keep within its area. Clouds may form in the tops of these thermals, and they sometimes produce showers and thunderstorms in which glider pilots find very strong up-currents. To the leeward of mountain ranges there may be waves of air which rise to great heights (*see* CLOUDS, Vol. III): in 1942 a German pilot reached 37,000 feet above sea-level in such a wave.

Gliders, like aeroplanes, are controlled by ailerons, rudder, and elevator. To maintain a glider in its correct downward path, the nose must be slightly depressed so that, like a bicycle free-wheeling downhill, it can be kept moving by the force of gravity. A modern glider, designed for soaring flight, is known as a 'sailplane'. A well stream-lined sailplane may fly at 50 feet per second forwards while losing only 2 feet of height in each second; so it needs an up-current of only 2 feet per second to keep it up. In the absence of an up-current, it can glide twenty-five times as far as its height above the ground, and is therefore said to have a 'gliding angle' of 1 in 25. The instrument board of a sailplane includes air-speed indicator, altimeter, blind-flying instruments for use in clouds, and, most important of all, a 'variometer', or rate-of-climb indicator, for finding up-currents. A variometer is particularly valuable on cross-country flights.

Most of the world's gliding is organized by clubs or schools, because a glider cannot be launched without assistance. Some British gliding clubs operate from hills, such as Dunstable Downs, or the Long Mynd, Shropshire; others use aerodromes and rely on thermals for soaring. A glider is launched either by catapulting it with an elastic rope, or by towing it with a detachable cable. This cable is either wound in by a motor winch or pulled along by a car, and can launch a glider up to 1,000 feet or more. Higher launches are obtained by towing the glider behind an aeroplane. A glider lands on a single skid, sometimes with a wheel.

Pupils without previous flying experience usually start training in a single-seater 'primary' glider of simple, robust design, and after a few slides, are gradually allowed farther off the ground as their skill increases. Dual-control lessons in two-seater gliders are sometimes given. Progress in training is marked by awarding a series of certificates from the 'A', given for a straight glide of 30 seconds, up to the 'Silver C', for a duration flight of 5 hours, a climb of 1,000 metres, and a cross-country flight of 50 kilometres. A few sailplane pilots hold the highest award, the 'Gold Badge', given for flights of 300 kilometres distance (186 miles) and 3,000 metres altitude (9,843 feet). Gliding records, both

A KIRBY GULL SAIL PLANE

A glider of British design launched by rubber cord from Bradwell Edge, where the Derbyshire and
Lancashire Gliding Club meets.   *A. E. Slater*

national and international, are officially recog-
nized, with separate categories for single-seaters
and multi-seaters. At the time of writing, the
official world's records are: altitude, 22,434 feet;
distance 466 miles; flight to previously announced
goal, 374 miles; out-and-return flight, 212 miles;
duration (two-seater), 50 hrs. 25 mins.

Transport gliders bear the same relation to
sailplanes as a towed barge to a yacht. They
were much used for transporting troops and
equipment during the Second World War, being
towed by aeroplanes and released near their
destination. In America a mail-carrying type is
in regular use, and can be pulled off the ground
by an aeroplane in full flight.

See also AIR DISPLAYS.

See also Vol. IV: AEROPLANE, GLIDER.

GLOCKENSPIEL, *see* PERCUSSION INSTRU-
MENTS.

GOLF. The word 'golf' probably derives from
the German word *kolbe*, meaning a club. Briefly
the purpose of the game is to hit a ball over a
defined area of country in as few shots as possible,
using a number of different clubs for the purpose,
and finally putting the ball down a hole.

1. GOLF COURSES normally consist of 18
sections called 'holes', although there are many
9-hole courses. The holes range in length from

about 150 yards to about 600, and the total
length of an 18-hole course is between 6,000 and
7,000 yards. Each hole begins with a 'tee'   a
turf platform often slightly raised—in which the
ball may be 'tee'd up', or placed in a favourable
position on a small peg or mound of sand. From
there the ball is struck towards the 'green' at the
end of the hole. The green is a smooth, closely
mown area of turf on which the hole itself, about
4 in. in diameter, is dug. The position of the
hole is marked by a flag, the colours of the flags
of the first 9 holes being different from those of
the last 9. The country between tee and green
consists of 'fairway', from which, as the word
suggests, it is comparatively easy to strike the
ball, and the 'rough', which may consist of long
grass, heather, or whin bushes, from which it
may be very difficult to extricate the ball. There
are two kinds of obstacles on golf courses—
natural obstacles such as ravines, streams, and
woods, and artificial obstacles, called 'bunkers',
which are sand pits dug on the fairway on the
approaches to the green. The golfer must cal-
culate the length and direction of his shots to
avoid these. If he hits the ball very much in the
wrong direction he may go out of bounds, in
which case he is penalized.

2. GOLF CLUBS. Different clubs are needed to
strike the ball a short or long distance, or from
different 'lies' or positions on the ground. When

the ball is on the tee, a wooden 'driver' is used a good average drive is about 200 to 250 yards: similarly, when the ball is in a good lie on the fairway, a wooden 'brassie' or 'spoon' is normally chosen. When, however, the ball is in a difficult position in the rough or is near the green, an iron club is used. Formerly all iron clubs had specific names, such as 'mashie', 'mashie-niblick', and 'cleek'; but nowadays they are made in sets of 8 or 9 and known by their number. It is not necessary to possess a complete set. Irons vary according to the angle of the blade, which determines the height and distance of the shot. Thus a No. 7 or No. 8, with blades which are sloped far back, would be chosen to hit the ball out of bunkers or very rough ground, or to 'pitch' it towards the hole when it was lying beside the green. For a straightforward shot from the fairway a No. 2 or No. 3 would be chosen. On the green itself a 'putter', which may be either a wooden or iron club, is used.

3. The Play. Golf games can be played in these ways: as 'singles' between two people; as

LIFTING THE BALL OUT OF A BUNKER
José Jurado (the Argentine Champion) in a match at the Royal Wimbledon Golf Club, Wimbledon
New York Times

'foursomes' between two pairs, the members of each pair striking their ball alternately; or as a 'four-ball' between four players playing in pairs, each playing his own ball, and the best ball of the pair being counted. A single golfer can play by himself against 'bogey'—a score reasonably possible for a proficient golfer fixed for each hole of the course. Golfers are handicapped according to their skill. If a player can complete a round in bogey, he is known as a 'scratch' golfer. If he is better or worse than bogey, his handicap is assessed accordingly. Thus, if a golfer with a handicap of 2 plays one with a handicap of 8, the former will give his opponent 5 shots during the round, to be taken at certain holes which are marked on the club score-card. The game is won by the player or pair who wins most holes during a round. If A wins the first hole by holing out in fewer shots than B, he will be '1 up'; if B wins the second, the match will be 'all square', and so on.

4. Golf Terms. A great number of terms and expressions are associated with golf; and of these many have come into everyday use. Some, such as 'fairway', 'bunker', 'bogey', 'scratch', have

THE POSITION AFTER MAKING A DRIVE
Norman von Nida, the Australian professional
Sport and General

already been mentioned: there are many others. A ball is called 'dead' when it has been putted so near the hole that the player cannot miss with his next shot. Hence the expression 'a dead certainty'. When A's ball lies directly between the hole and B's ball, making it impossible for B to hit his ball straight to the hole, B is said to be 'stymied'—an expression often used outside the golf course. The shot which makes B's number of shots equal to A's when playing a hole is called 'the like'. Thus one player may have two or three shots in hand 'for the like'. The privilege of striking first off the tee is called the 'honour'. The winner of one hole invariably has the honour at the next, nor can he decline it. A hole is said to be 'halved' when both players take the same number of shots to it. A 'divot' is a lump of turf cut out by the player's club, and it must be replaced. 'Fore' is a warning shout to people ahead on the course that the ball is going to land near them. A player is said

AN 18TH-CENTURY GOLFER
Painting by Sir George Chalmers (1791)
Reproduced by permission of the Royal Company of Archers, Edinburgh

to be 'dormy' when, at a certain point in the round, he cannot be beaten—for example, if he were two up and only two holes remained to play, he would be 'dormy two'.

GOLF, HISTORY OF. Nothing is known about the origins of the game of golf, although it was probably first played in Holland. Nor is it known when and by whom it was introduced into Scotland; but it was certainly established there by 1457, when it was referred to in the Scottish Parliament as interfering with the more important pursuit of ARCHERY (q.v.). In 1592 the Edinburgh town council issued an edict prohibiting the citizens from playing at golf or similar pastimes on Sundays. Whatever its history may have been, golf was recognized at an early date as a national game of Scotland. It came to be associated with the Scots' character; the people were brought up to know and respect its traditions, and golfing terms were used in speech and writing. When, for instance, in Sir Walter Scott's novel, *Redgauntlet*, Mr. Fairford tells his son that everything is managed for him 'like a tee'd ball', he is using a simile from his favourite game which would be widely understood.

Golf was known in Scotland as 'the Royal and Ancient Game of Goff', and is said to have been played by many Scottish kings from early times. Charles I and James II were keen golfers, and in 1834 William IV became patron of St. Andrews Golf Club, both then and now the most famous of golfing seats.

It was not until towards the end of the 19th century that golf began to spread over England. Famous courses, such as Hoylake in Cheshire and Sandwich in Kent, were laid out; and professional golfers were no longer invariably drawn from Scotland. And when English courses were selected for the Open Championship, English golfers could claim that they played on an equal footing with their northern neighbours. Golf tournaments at the beginning of the 20th century were dominated by the great English golfers J. H. Taylor, James Braid, and Harry Vardon.

Golf has now spread to many countries in the world and has taken root particularly in the United States. It was unknown there before 1890; but to-day American golfers are among the greatest in the world and have contributed much to the development of the game as we know it.

THE WALKER CUP MATCH, PLAYED AT ST. ANDREWS, SCOTLAND, MAY, 1947
The American player, Frank Stranahan, is putting on the green. *New York Times*

There are now about 2,000 golf clubs in Great Britain, ranging from famous championship courses to small public courses or 'links'. Private clubs are financed by the subscriptions of members and by the 'green fees' of visitors who pay for temporary use of the course. On public or municipal courses anyone can play by paying a small sum. Most of the larger clubs employ a full-time professional golfer, who gives lessons and runs a shop where clubs, balls, and other equipment can be bought or repaired. Groundsmen are also employed to keep the course in good condition. Some of these professionals have very often graduated from the ranks of 'caddies' —boys employed to carry players' golf clubs— who have followed the game from childhood.

Golf has become a popular form of exercise and relaxation for all classes of people, both men and women. A boy can begin to hit a golf ball when he is 7 and still be able to play a round when he is 70. The possession of a good golf course in the neighbourhood is a considerable commercial asset to a holiday resort -some of the finest courses often being near seaside resorts, where the sandy soil is suitable for the construction of a course. Every year amateur and professional tournaments, both for men and women, are arranged all over the country, professionals playing for prize money and amateurs for trophies. The most important event is the Open Championship to which competitors, both amateur and professional, come from many countries. International matches are also played between England, Scotland, Ireland, and Wales, as well as between other countries. The principal matches are between Britain and the U.S.A., amateurs playing for the Walker Cup, professionals for the Ryder Cup, and women for the

Curtis Cup. In golf tournaments the public are able to pay to follow the players round the course and watch the masters of the game at close quarters.

See also GOLF.

GRAMOPHONE (PHONOGRAPH). Attempts to record sound had been made from the beginning of the 19th century; but the first man to succeed in doing this was E. L. Scott, an Irishman whose family had lived in France for a long time. In 1857 he invented an instrument which he called the Phonautograph (from Greek words meaning 'voice', 'self', and 'write'): this instrument could make a record of sound, but could not reproduce or 'play it back'. Shortly afterwards the famous American inventor, Thomas EDISON (q.v. Vol. V.), invented a machine which he called the Phonograph, which could both record and reproduce sound. It is said that the first words which Edison actually reproduced were 'Mary had a little lamb'. In 1880 another American, Emile Berliner, obtained patents for several great improvements on Edison's phonograph. He called his instrument the Gramophone, an inversion of Edison's title.

Sound is produced by vibrations, and, to reach our ears, must travel through some material substance. Usually the medium is air, although sound can be transmitted by other means; for example, by the bones of the head, as can be shown by gripping a fork between the teeth and tapping it (see Vol. III, SOUND). Sound waves cause objects to vibrate when they strike them. When a singer was recording with the older type of gramophone and phonograph, he sang into a horn which had a thin metal plate called a diaphragm. When the sound waves struck the diaphragm, it vibrated and operated a cutting needle which scratched the sound waves on a revolving wax record. When the needle moved again along the grooves of the record, the vibrations were transmitted to the sound box of the machine which reproduced them, greatly amplified, and threw them into the air through a horn. In the phonautograph Scott used a rotating cylinder coated with lampblack as his writing paper, and a hog's hair bristle attached to a parchment diaphragm as his pen. Edison used tin foil on a cylinder instead of lampblack, and a rigid needle instead of a bristle. During recording, the needle made per-

THE PHONOGRAPH
Thomas Edison in America listening to the first 'Voice Letter' made by Colonel Gouraud in England in 1888

endicular or 'hill and dale' cuts in the tin foil. Berliner substituted for Edison's cylinder a plate which revolved on a turntable, and his cutting needle made side-to-side instead of perpendicular impressions on the record. With both these machines the record was revolved by a handle which was turned continuously by the operator. Later, a clockwork mechanism was devised which needed to be rewound frequently.

Originally records could not be duplicated, but had to be made direct. A singer used to sing into a number of recording machines, each of which produced a record of the song. Later, it was found that, by the process of electro-plating, a duplicate in copper could be produced from the original wax record on which the recording was made. From this hard or 'master' record a mould could be made from which any number of disks could be produced. This process remains the same to-day. The 'shellac' composition of which records are made was first used by Berliner. As a result of the process of duplicating records, a separate machine, the gramophone, could be used for reproducing only.

In 1925 electric recording was introduced. The horn was replaced by a microphone and an electric amplifier. When recording, sound vibrations are picked up by the microphone, and are turned into electric currents. These vibrate the cutting needle travelling over the revolving wax disk. In reproducing the sound, the needle communicates the vibrations to a 'pick-up', which transmits corresponding electric vibrations to the interior of the instrument, where they are amplified by electric 'valves'. Corresponding mechanical vibrations are transmitted to a 'loud-speaker', from which they issue as sound. The motor which revolves the records is also driven electrically. The electric process gives a far more natural recording than that of the old 'acoustic' methods. Recording can also be done by magnetizing metal tape or wire, or paper tape coated with metallic powder. Sound vibrations picked up by a microphone cause vibrations in the current passed through an electromagnet. This method is used particularly for recording public speeches or ceremonies.

Neither Edison nor Berliner can have imagined that their inventions would develop into the great modern gramophone and record industries. Edison designed his phonograph as a 'dictating' machine for use in offices. Berliner thought that his gramophone might be used for 'talking dolls', and actually produced some of them. It was only at the beginning of the 20th century, when great artists such as Caruso and Melba recorded their voices, that the potential value of the gramophone as a means of entertainment began to be understood. At first vocal and violin solos made the best records, while the sound of the piano did not reproduce at that time with any success. The first opera to be recorded was Verdi's *Ernani* in 1903, and the first complete symphony was Beethoven's Fifth, recorded by the Berlin Philharmonic Orchestra in 1909. In the last 20 or 30 years a vast number of orchestral and vocal records of all kinds have been recorded, and albums of complete operatic and orchestral works can be bought. Many of the records made in the early days of recording have been re-recorded, the voice part being taken from the old record, and a new orchestral accompaniment added. For a long time records were single-sided, but from 1905 double-sided ones began to be made.

To-day the scope of recording is very wide. The microphone can record whole performances of plays and concerts, the speeches of statesmen, the noises of crowds on great occasions, the songs of birds, and the noises of animals. These recordings can be played back later on any number of occasions. Apart from giving entertainment, they give a valuable documentary picture of our times. The gramophone is being increasingly used for a number of special purposes. It is used to make long records or 'talking books' for the blind; for research into folk music; and in education for teaching the pronunciation of foreign languages. Also, the modern form of Edison's phonograph, known as the dictaphone, is used in large offices for dictating letters.

See also Vol. VIII: SOUND RECORDING.

GRAND NATIONAL RACE. This, the world's greatest steeplechase (jumping race), is run over 4 miles 856 yards at Liverpool every March. It dates from 1839, and was at first called The Grand Liverpool Steeplechase. From 1847 the race was called the Grand National Steeplechase. Entry is open to horses aged 6 years and over who have previously won a steeplechase of 3 miles in length and of a certain value.

The Grand National calls for the greatest skill, ability, and stamina on the part of both horse and jockey. But whereas the DERBY (q.v.) is invariably contested by very highly bred

THE GRAND NATIONAL STEEPLECHASE AT AINTREE, 1949
The winner was Russian Hero, whose jockey can just be seen on the extreme left. *Sport and General*

horses, the Grand National has been contested and won by horses of obscure origin, many of them bought for a small sum. It is on record that one winner had pulled a horse-drawn station omnibus. Nowadays the top-class steeplechaser, bred especially for cross-country sport, is a much more valuable horse than his ancestors were, although it is still possible for an astute buyer to get a bargain. Ireland has always been the best breeding ground for steeplechasers, and out of the last forty-four winners of the Grand National thirty-one were bred and raised there. In fact, it is impossible to find an occasion when Ireland did not have a big interest in the race, and more often than not the winner has been bred, owned, ridden, or trained by an Irishman. There have also been winners from New Zealand, U.S.A., and France.

There are sixteen obstacles on the Grand National course, and all but the last two—the open ditch and the water jump—have to be

THE GRAND NATIONAL COURSE

jumped twice. The most famous of the jumps are 'Becher's Brook' and 'Valentine's Brook'. These are fences with a natural brook on the far side. The course is an irregular shape and just before 'Valentine's Brook' there is a sharp turn called the 'Canal Turn'. This stretch is considered the most exciting and difficult. The highest fence is at the open ditch. It is 5ft. 2 in. high and 3ft. 9 in. wide. The ditch itself is 6 feet wide, so altogether the horse has to jump 5 ft. 2 in. in height and 9 ft. 9 in. in width. The diagram shows the position of the jumps.

Gigantic as these jumps are, several athletes have been round the course, taking them all successfully, even the great water jumps. But many horses refuse and some fall, so that only a small proportion of the starters finish. The field is usually between 25 and 35. The largest number of starters was 66 in 1929, and the largest number to finish was 18 in 1947. In 1928 only 2 horses finished. Several horses have won the race twice. The most recent double winner was Reynoldstown in 1934 and 1935. He also set up the record time of 9 min. 1¼ sec.

See also HORSE RACING.
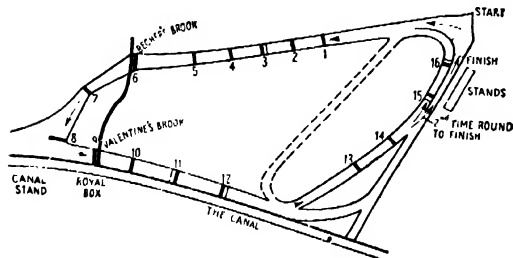
GRAND PRIX RACES, *see* MOTOR RACING; MOTOR CYCLE RACES.

GREEK DANCING. History shows that the first impetus to the creation of almost any art lies in religion. The first dances of the Greeks were

part of their religious RITUAL (q.v. Vol. I); and their evolution followed the history of the Greek race throughout all its ages.

The primitive rituals of the MINOAN peoples (q.v. Vol. I) of the Aegean included dances, but very little is known of the dancing of this period. Clear references, however, to the dances of the Greeks are found in the writings of Homer, which tell of religious ceremonies, sacrifices, and funeral rites, and of bridal dances and vintage dances. There is one vivid description of a dance in which youths and maidens, holding one another by the wrist in long lines, advanced and retired, much after the manner of many folk dances. Homer also gives us a short but vivid picture of two boys dancing with a 'goodly ball of purple hue'.

During the Dorian era, the art of dancing developed a great deal, and in the 5th century B.C., that golden age of Greek culture, the dance became a means of expression of every phase of human life, thought, and feeling. There were ritual dances as part of worship in the temples; and there were the dances of the chorus as part of drama in the theatres. There were dances of mourning at funeral ceremonies; and social dances at weddings and other social festivities. There were country dances danced at the festivals of the seasons, and religious ecstatic dances connected with the festivals of Dionysus. The ancient Greeks appear to have expressed themselves through the medium of the dance at all times and in all places. The high ideal of physical beauty held by the Hellenes of the 5th century B.C. inspired their dancing—and these same ideals have inspired the revival of Greek Dancing in this present century.

At the end of the 19th century there was an increasing urge to break from the conventional form of the BALLET (q.v.) and to produce a form of dance with more scope for individual expression. This break showed itself first in an eccentric and contorted form of movement originating in the Montmartre district of Paris, but which restricted itself to the music halls and had little effect on serious dancing.

The truly creative move came from America through a great artist, Isadora Duncan. She turned first to nature for her inspiration, and, to quote her own words, attempted 'to seek in nature the fairest forms, and to find the movement which expresses the soul of these forms'. To interpret her ideas she had to form a new technique, many of the ideas for which she drew from the Hellenic arts.

About the same time, an English dancer, Ruby Ginner, was also evolving a technique of dancing capable of expressing a wide range of dramatic feeling and emotion. She turned to the dances of ancient Greece as a guide, and studied the movements of dancers and athletes as portrayed on Greek vases and sculptures. She selected and reconstructed certain recurring poses and movements, and used them as the basis of a definite technique, designed to produce the proportion, rhythm, and naturalism of Greek art. She then evolved many more movements

A PERFORMANCE OF DANCING IN THE REVIVED GREEK STYLE

J. Smart

MODERN GREEK DANCERS
Claude Harris

able not only to express the ideas of the ancients, but also those of modern life. She studied the Greek dramatists, poets, and philosophers for the aesthetic inspiration of her work. Other dancers were also striving to find new and freer methods for the art of the dance, and all were to some degree influenced by the ancient Greek ideals of the dance.

The great difference between the revived Greek Dance and the Ballet lies in the fact that the Greek dance is more entirely a dance of gesture rather than of step. In ancient Greece the dance was performed in vast spaces under the open sky, and small intricate steps would hardly have been visible to the audiences rising tier above tier upon the hill-side. Only broad, free steps could have carried the dancer round the great circles of the orchestras. The ancient dance being primarily dramatic and interpretative, gesture was of first importance—a language in itself. Modern Greek dancing naturally followed the same lines. In comparison with the Ballet it is limited in its number of steps, but the gestures and arm movements are far more numerous and varied.

The work of Isadora Duncan spread in France, Germany, and America; but in England the Ruby Ginner form of dance has spread farthest. Her school, established in London in 1916, soon gave rise to other centres under trained teachers. In 1923 the Greek Dance Association was formed, and now conducts public examinations for teachers, students, and children. The revival of Greek Dancing began as an art in the theatre, but its educational value was soon realized. It is now taught in many schools in the British Isles, and large and growing centres of dancing exist in all the Dominions as well as elsewhere throughout the world.

See also DANCING, HISTORY OF.

See also Vol. I: GREEK CIVILIZATION.

GREEK GAMES, *see* OLYMPIC GAMES.

GREYHOUND RACING (TRACK). Before greyhound track racing started in America in 1909, attempts had been made to popularize greyhound sport in other ways than COURSING (q.v.). As early as 1876 the first mechanical hare made its appearance in a meeting at the Welsh Harp, Hendon. Mounted on a rail, the 'hare' was drawn along at the end of a cord wound round a windlass. The event was favourably reported in *The Times*, and might have been successful if the course had not been straight; but on the straight 400-yards' course the races were all won by the fastest dogs, and not by the cleverest—those which had proved most successful in the coursing field in pursuit of a real hare. In 1890, therefore, a patent was taken out for a circular track, but the inventor was financially unable to put his scheme into practice. Later in the 1890's attempts were made to show the coursing of live hares with greyhounds in a stadium; but after a temporary popularity, the sport fell out of favour because people disliked the sight of the constant killing of hares.

The first demonstration of a mechanical lure in America was given in 1907 at Hot Springs, South Dakota, and the inventor, O. P. Smith, built the first greyhound track at Tuscon, Arizona, in 1909. A second track appeared in

Texas in 1912. After many improvements, circular-track greyhound racing was brought to England and opened at Belle Vue, Manchester, on 24 June 1926; and in 1927 it started at the White City in London. It flourished immediately, and within a year over fifty greyhound tracks had been prepared or were being planned all over the country. The National Greyhound Racing Club, consisting of well-known sportsmen who had no financial interest in the racecourses, was established in 1928. The Club was to be responsible for drawing up the rules and regulations and for seeing that they were carried out. At the same time the racecourse managements formed a federation—the National Greyhound Racing Society of Great Britain—to look after the administrative and financial side. The Betting and Lotteries Act of 1934 made certain provisions concerning licensing the legal use of totalizators and betting on racecourses (see BETTING and GAMBLING); but it did not concern itself with the direction of racing, which was left in the hands of the N.G.R.C.

In England, Scotland, and Wales there are about 150 dog-tracks, of which 78 are approved by the N.G.R.C. and race under their rules. The Club, a very efficiently run organization, keeps a most careful watch on all records, identities, and registrations. All greyhounds must be registered before they can race on a N.G.R.C. track, and since 1928 over 122,640 registrations have been accepted and filed. A complete description of each dog is recorded; and an Identity Book is issued containing all its particulars—the names of its sire and dam, date of birth, sex, measurements, colour of its eyes, and even detailed descriptions of toes and toe-nails—a necessary precaution against the substitution of one dog for another.

The rearing of puppies up to the age of 15 months (the age at which a greyhound may begin competing on an approved course) is now considered one of the most important activities in the background of the sport. Under the skilful care of professional rearers, the eager puppy or 'sapling', who is ready to chase anything that moves, is brought on slowly and methodically in healthy open spaces. With steadily increasing spells of light schooling, the youngsters' constitution is built up to withstand the days of serious training ahead. Every racecourse has its own training and schooling establishment.

Each racecourse has an appointed number of qualified officials who must be approved by the stewards of the N.G.R.C. These are three stewards, a veterinary surgeon, a judge, racing manager, starter, time-keeper, and hare-controller. Greyhound racecourses vary considerably in measurement; the smallest circuit, at Norwich, is only 322 yards all round, while the

THE START OF A GREYHOUND RACE AT WIMBLEDON STADIUM
The winner was No. 2. *Sport and General*

largest, West Ham, London, measures 520 yards. Under the Rules of Racing all greyhounds must parade round the track before each race, wearing the racing colours representing their position in the 'traps'—the boxes just behind the starting-point in which the dogs are placed in preparation for the start. Each trap has a colour, the same colours being used on all tracks throughout the country: Trap 1, Red; Trap 2, Blue; Trap 3, White; Trap 4, Black; Trap 5, Orange; Trap 6, White and Black Stripes. Trap 1 is always on the inside—nearest the inner rail. Not more than six dogs can compete in flat races, and not more than five in hurdle events. On the signal for the start, the 'hare' is moved off, and when it passes a certain point in front of the starting box, the trap doors are automatically raised, and the dogs dash out.

On the small courses the speed straights are short and the bends are sharp and difficult—courses especially suited to the smaller type of dog which can turn quickly. The big tracks, known as galloping tracks, have much longer straights and wider bends. Electric hares are used either on the inside or on the outside of the track—to a good racer it makes little difference which side the hare travels. The distances of races vary at each track, to allow the starting position to be as far back from the first bend as possible, and to reduce bunching and bumping.

The principal interest in the sport lies in the fact that dogs have different starting paces and very different ways of running. A dog's speed is fastest in the first 200 yards, sometimes reaching a speed of 36 m.p.h. The average time of a 525-yards' race is 30 seconds. (The national record for this distance is 28·64 seconds.) There is the 'flash starter' who brings a gasp from the crowd with his lightning breaks; the 'railer' who clings tenaciously to the rails; the 'stayers' who stage their dramatic last-minute bursts on the home straight; and the wise old 'veterans', whose clever use of track-craft outmatches the wild pace of the flyers. Also there are the dashing young puppies who play havoc with 'form', and, perhaps the most attractive of all, the 'hurdlers'. A contest of first-rate jumpers, taking the four flights of 2 ft. 6 in. hurdles with smooth, fluent leaps that cover nearly 30 feet, is a stimulating exhibition of graceful motion.

The Greyhound Derby is the blue riband of the track, and there are seven other classics as well. The most famous of all racing greyhounds was Mick the Miller, the winner of four classics, including two Derbys. He was not only a fast, powerful dog, but intelligent—and even when only 5 years old, could outwit his faster rivals. After his death in 1938 his body was presented to the Natural History Museum.

See also DOGS, BREEDS OF, Section 2; COURSING.

GROUSE SHOOTING, *see* GAME SHOOTING.

GUINEA PIG, *see* PETS; *see also* Vol. II, CAVY.

GUITAR, *see* LUTES AND GUITARS.

GUNS, *see* SPORTING GUNS AND RIFLES.

GYMKHANAS. The origin of this word is obscure; but it is probably a corruption of the first syllable of gymnastics and the Hindustani word *gend-khana*, meaning a rackets-court or sports arena. The first gymkhanas were little more than improvised horse-races, conducted with little ceremony and fewer rules. These impromptu meetings became increasingly popular, and, as a result, increasingly elaborate. Gymkhanas are now a very popular form of summer afternoon's amusement, and there are few parts of the country where they are not held. They are often organized by local branches of the PONY CLUB (q.v.).

Those responsible must take account of many considerations. Having found a suitable meeting place, they must arrange car parks and perhaps engage a band. Ice-cream and minerals for the hot and thirsty must be provided, as well as water and hay for the ponies and horses. Variety in the nature of events is desirable, and all the different implements of contest—lances, eggs, spoons, chairs, sacks, balls and baskets, buttons, and needles and thread—must be made available. Tact is often necessary when, for instance, a kicking pony has to be ordered out. And at the last moment the whole undertaking may be completely ruined by a downpour of rain.

There are a great number of possible events, but certain events, such as the bending competition and musical chairs, are included in almost all gymkhanas. In the former, two sets (or more) of poles are placed upright and 8 yards apart in lines at one end of the gymkhana ground. The competitors, one rider for each set of poles, start at the other end, gallop to the first pole, which they pass on their right, and ride zigzagging

THE BANSTEAD PONY SHOW AND GYMKHANA AT BANSTEAD, SURREY, 1949
The veteran class for horses and ponies is being judged
Sport and General

between the poles to the last one, and then back again between the poles, and so to the start. There are various forms of musical chairs; in one form a number of wooden buckets are placed at one end of the ground. The competitors, who number one more than the buckets, canter round in a large circle or at the other end of the ground, while the band plays. The moment the music stops, they gallop towards the buckets, circle a post, ride up to the buckets, and seize one. The rider without a bucket drops out. Each time another bucket is removed, until only one bucket and two riders remain.

Most events consist of a race in one form or another—the egg and spoon race, the groom's race, and the rescue race. In the latter a number of girls sit in chairs with their ankles and hands tied together. The boys, leading spare ponies, ride to horse-holders and hand over the ponies. They then run to the girls, release them, and push them in wheelbarrows back to the ponies. Then they all mount and race back to the start. Other events include a competition for the best turned out pony and rider, handkerchief snatching, wrestling on horseback, and tent pegging. Most gymkhanas include also some jumping contests.

See also RIDING; PONY CLUB.

GYMNASTICS. This is the practice of physical exercises for recreation and for the development of bodily physique. The building where these exercises are performed, and where special apparatus is installed for the purpose, is known as the gymnasium. Gymnastics were practised in the ancient civilizations of China, India, and Egypt; and particularly under the Greeks, who had a high ideal of bodily culture and honoured the victors of athletic contests (*see* OLYMPIC GAMES). The word gymnastics derives from the Greek word meaning 'naked'; for competitors in athletic contests used to exercise naked in the gymnasia. The Greeks recognized that gymnastics were important to the good health and all-round development of the young and they therefore associated this practice with education: Greek boys received many of their lessons in the gymnasia. The Greeks also used the gymnasia as centres where they went for intellectual discussion, much as the Romans used the baths (*see* ROMAN BATHS). Famous philosophers, such as Plato and Aristotle, used to lecture and talk there.

After the Greeks the practice of gymnastics fell into neglect, and it was not until the Renaissance that interest in systematic physical exercise was revived. The French philosopher Rousseau was an advocate of gymnastics for promoting good health. At the beginning of the 19th century F. L. Jahn in Germany, Nachtegall in Denmark, and P. H. Ling in Sweden did a great deal to promote a revival

A SOKOL DISPLAY AT PRAGUE, CZECHOSLOVAKIA
New York Times

in this type of exercise. Jahn was responsible for exercises performed on the horizontal and parallel bars. Ling was the founder of the modern educational physical training, and laid down tables or lists of rather formal exercises which were designed to exercise each part of the body in turn. At the beginning of the 19th century the revival of gymnastics on the Continent and especially in Scandinavia began to have its effect in England. At the beginning of this century the Scottish Education Department officially adopted Swedish methods, and in England in 1904 the Board of Education published a syllabus of Physical Training. To-day gymnastics are an essential part of training in schools and in the armed forces, especially with recruits; and they are included in the activities of voluntary organizations such as the Boys' BRIGADE and the BOY SCOUTS (qq.v.) and most other youth organizations. Special gymnastic courses are prescribed for people suffering from certain diseases and from the effects of certain wounds. Gymnastic displays have become a feature of the modern Olympic Games.

Gymnastics are performed with and without special apparatus. Included in the usual equipment of a gymnasium are parallel and horizontal bars, a wooden horse over which the gymnasts perform a variety of vaults, and ropes slung from the roof. Modern gymnastics tend to stress free

and rhythmical movement rather than the more precise and formal exercises of the past. It is their object to train every part of the body evenly, and not to develop great muscular strength. Rhythm, balance, and timing are emphasized.

Recent years have seen the rise of movements entirely concerned with physical training—many of them for women. In the late 1920's the women's 'Keep Fit Movement' started in Sunderland; and in 1930 the late Mrs. Bagot Stack founded the Women's League of Health and Beauty. Popular as these movements have been, there has been nothing in this country to equal in size the 'Sokol' gymnastic movement in Czechoslovakia or the 'Strength Through Joy' movement in Nazi Germany. Both of these had a strong political significance, the Sokol being a method of keeping alive a spirit of independence among the Czech people under the Austrian domination (*see* CZECHOSLOVAKS, Vol. I), and the Strength Through Joy being a method of inculcating the Nazi spirit. In 1935 the Central Council of Physical Recreation was founded in Britain to promote agreement on national standards of training and leadership. The fact that its members include some seventy national organizations concerned with physical training shows how diversely the British people pursue a common aim.

See also ATHLETICS.

H

HAMMOND ORGAN, *see* MUSICAL INSTRU-
MENTS, SECTION 3.

HARE AND HOUNDS, *see* TRACKING.

HARE HUNTING. Hares are hunted by four
types of hounds: the greyhound, which hunts
solely by sight (*see* COURSING), the harrier, the
beagle, and the basset-hound, all of which hunt,
like the foxhound, by scent. Of the three latter
types of hound, the harrier is the largest, being
only slightly smaller than the foxhound; har-
riers are followed on horseback. The beagle is
from 14 to 16 inches high (the average foxhound
is about 24 inches); and the basset-hound is
usually rather smaller. Both are hunted and
followed on foot. Though hare hunting is a
much older sport than fox hunting, it is now
considerably less popular, there being only some
60 packs of hare-hounds in Great Britain com-
pared with almost 200 packs of foxhounds.

The general organization of a hare-hunting
country, whether the pack kept is one of harriers,
beagles, or basset-hounds, is identical with the
organization of a fox-hunting country, while
hare-hounds are bred and managed, and, in
general, handled in the field, in just the same
way as are foxhounds. Such differences as do
exist between the two are due solely to the dif-
ferent habits and natures of foxes and hares.
The fox is a woodland creature which, if forced
into open country, may be expected to run fairly
straight, eventually seeking refuge in an earth
or underground hole. The hare, on the other
hand, is a creature of the fields, with no hole
in which to take refuge; so she has to rely for her
safety on tricks which she hopes will baffle the
pursuing hounds. (To hunting people a hare is
always 'she', no matter which sex it may be.)
Many are the tricks played by a hunted hare:
she will run back along her own track for some
distance, and then take a great sideways spring;
she will run in circles round and round the same
field, and then spring off to one side; she will
push up a fresh hare, herself lying down in
its 'form' or seat. In general, a hare runs in
circles rather than along fairly straight lines
as does a fox (*see* HARE, Vol. II).

Because of her tricks, and because a hare's
scent is a little weaker than that of a fox, it is
much harder for hounds to hunt a hare than a
fox. Hare hunting is therefore a slower process
than fox hunting, with less dash and devilry
about it. The foxhound huntsman is a com-
paratively noisy fellow, cheering his hounds and
blowing his horn at fairly frequent intervals.
The hare huntsman, however, knows that his
hounds must concentrate their whole attention
on following the scent, and must not be
distracted by his cheers, nor urged to push on
too fast lest they overrun the scent at the place
where the hare has made one of her sudden
twists. The hunting of the hare, indeed, is an

HOUNDS WORKING THE FIELDS AT A MEET OF THE OLD BERKELEY BEAGLES AT PENN, BUCKS
Sport and General

inch-by-inch affair, though with a good scent many of those inches are covered at a very fast pace.

One of the chief differences between fox and hare hunting lies in the 'draw'—the search for the quarry. The fox normally lies in a wood, and the hounds alone look for it, the followers playing no part in the search. But the hare may be lying anywhere in the open fields, and, since it would be an endless task for ten or even fifteen couple of hounds to search the whole of every field, the help of the followers is enlisted, and they are asked to spread out behind the hounds and keep their eyes open for a hare squatting in her form.

Harriers in general hunt in good riding countries where there are no foxhounds: beagles or basset-hounds in fox-hunting countries. Fox hunting, which involves the keeping of horses and the wearing of special clothes, is a much more expensive amusement than hare hunting on foot. Following a pack of beagles or basset-hounds can be very good exercise and much fun, and can teach one a great deal about hounds and hunting, as well as natural history, at very small cost.

See also HUNTING, HISTORY OF; COURSING; FOX HUNTING.

HARLEQUINADE AND PANTOMIME.

Harlequin was originally in the Middle Ages a legendary figure in Continental folk-tale, the leader of a troupe of demon huntsmen, at first sinister, then comic. Some people think there may also be a connexion between the name of Harlequin and that of the 'hell-mouth', one of the stock devices of the medieval stage, which was called in France *la chappe d'Hellequin*. Harlequin first appears as a character in the theatre as one of a group of comedians of the Italian Commedia dell' Arte, who, acting with masks, mime, and spontaneously invented dialogue, became popular all over Europe in the early 16th century.

When the Italian actors of the Commedia dell' Arte went to France in the late 16th century, Arlecchino (Harlequin) appeared as the comic valet or zany, wearing a garment of motley patches with a feathered cap and black mask. He was the leader of the troupe, which included other well-known characters. Pedrolino, best known by his French name of Pierrot, was the sly and malicious character who used

the stupid Harlequin as the butt of his jokes. Pulcinella (or Punchinello) was the rogue and practical joker who, according to some authorities, became the English Punch (*see* PUNCH AND JUDY). Pantalone was the greybeard and conventional father, the 'lean and slippered pantaloon' referred to by Jaques in *As You Like It*. Scaramuccia was the manservant, for a long time the companion of Pulcinella. Columbine was the pretty maidservant who later becomes the sweetheart of Harlequin.

The Italian actors incurred the displeasure of Louis XIV, and the troupe lost its importance in France, appearing only on fairgrounds, with the play turned to a mime in dumb show. In course of time the characters changed. By the 17th century Harlequin had become the wit, and the conventional dress became a tight, diamond-checked costume. Pierrot became the fool; but owing to the influence in the 19th century of the great French mime, Debureau, he became also a pathetic character, sometimes standing for the gullible and romantic qualities of youth, often disappointed in his love for Columbine. His typical costume is the loose, white, clown-like garment, and his face is chalky white and without a mask.

During the 18th century in England Harlequin attached to himself and his troupe many popular stories of the times with astonishing events and transformations. It was at this point that pantomime as we know it began to emerge. The term strictly means a representation in dumb show, so the plays in which Harlequin and his troupe had speaking parts were called speaking pantomimes. For many years these old traditional figures were the central characters of pantomime, which became so popular that, until the end of the Regency period, it was played all the year round. Later the Harlequin shows were associated with fairy tales and the folk-tales of many nations, and were given mainly for the entertainment of children. Harlequin became less important in pantomime proper, which began to develop on rather different lines.

It was John Rich, at his theatre in Lincoln's Inn Fields in the latter half of the 18th century, who established performances of the Harlequinade in England, and who saw its wider possibilities for stage spectacle, and added extra characters to the stock ones. One of these characters was the CLOWN (q.v.), with whom the

name of Joseph Grimaldi (q.v. Vol. V) is associated, and who soon outshone the others in importance. About this time also it became the custom to present the pantomime in two parts. The first part had a fairy-story framework; but when the fairy-tale with its appropriate characters had been enacted, there came the transformation. The Fairy Queen turned the fairy-tale characters into the characters of the Harlequinade, who, with the clown, turned the rest of the evening into a series of comic events. This transformation scene has remained one of the special features of pantomime. It uses all the splendour and ingenuity of stage devices. The curtain rises on an elaborate scene, thronged with actors and troupes of dancers. Gauze curtains rise one after another to disclose more and more vistas, with the lighting changing all the time to heighten the effect of wonder.

John Rich at his own theatre greatly developed the form of pantomime, and the theatres at Drury Lane, Covent Garden, and Sadler's Wells became famous for it; but it was not until the middle of the 19th century that it became so popular that licences were granted to other theatres for it. It is now associated particularly with the gay and lavish spirit of Christmas. The influence of the Music Hall (q.v.) was felt in it, and popular songs and topical allusions became part of it, with a great deal of clowning and horse-play. From this time on, the fairy-tale and Harlequinade have provided only a framework for the dancers, singers, acrobats, and clowns.

Pantomimes of to-day are on a splendidly lavish scale, with hundreds of performers. They all have their stock characters—the Fairy Queen, the Demon King, the Clown, the Dame (played by a male comedian), and the Principal Boy (conventionally played by a musical comedy actress). They provide many of the catch phrases

A HARLEQUINADE SCENE WITH COLUMBINE, HARLEQUIN, AND PUNCHINELLO
Painting by Nicolas Lancret, 1690–1743. *Wallace Collection, London*
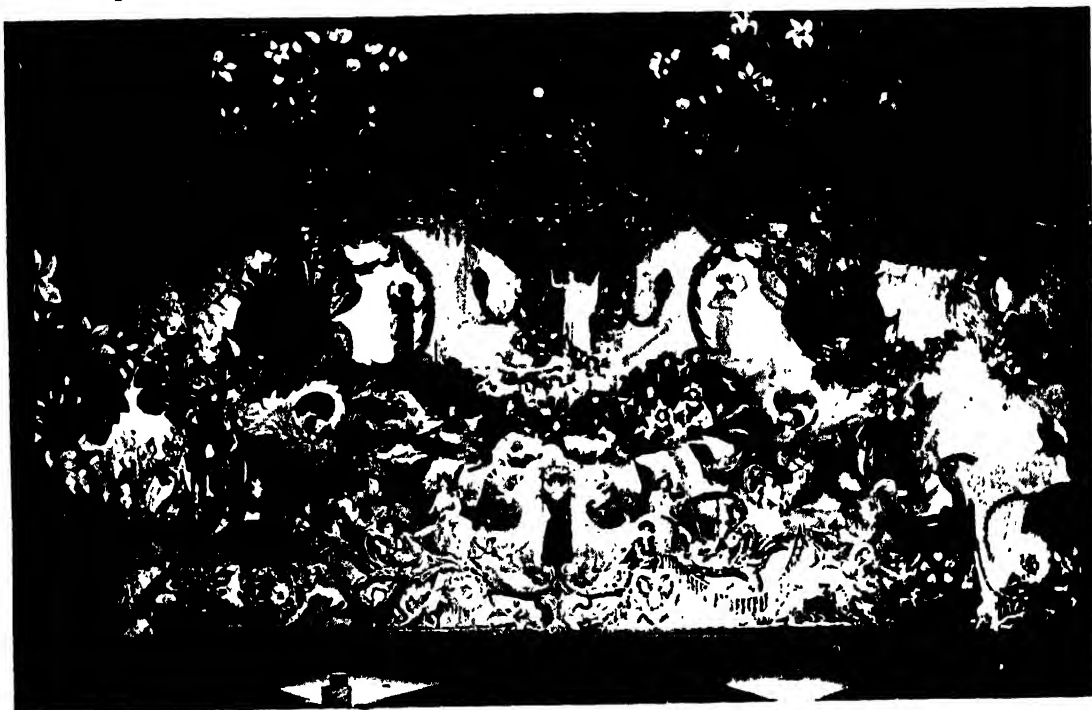
THE TRANSFORMATION SCENE IN THE PANTOMIME, 'THE SLEEPING BEAUTY', AT DRURY LANE, 1900
Enthoven Collection, Victoria and Albert Museum

and popular songs of the season during their long runs at most theatres in the country, often from Christmas till Lent. Harlequin himself has practically vanished from the theatre, but is still to be seen in plays such as *The Glass Slipper* or in the ballet *Carnaval*.

See also ACTING, HISTORY OF; MIME; CLOWNS.

HARMONICA. The name harmonica is now commonly used as an alternative name for the mouth organ (*see* REED ORGANS). During the 18th century, however, the harmonica was a crude musical instrument constructed from a set of drinking-glasses which were tuned to the musical scale by filling the glasses with water to varying depths. The sound was produced by rubbing wetted fingers round the rim of the glass.

In 1746 Gluck performed in London on such a set of glasses; and the press advertisement of the event even claimed that he could play on his twenty-six drinking-glasses tuned with spring water, any music which could be played on a violin or harpsichord. Benjamin Franklin invented a harmonica in which the graded glasses or basins were arranged so that they rested on a central spindle, which was made to revolve by a foot-pedal action; the fingers were then placed to the revolving rims according to the notes required. This instrument was later fitted with a keyboard, and became more adaptable and convenient for the player. Mozart, Beethoven, and other composers of the 18th and early 19th centuries wrote small works for the instrument.

The name harmonica has also been used for a dulcimer in which glass strips are substituted for the usual strings. When the hammers which strike the glass strips are operated by keyboard mechanism, the instrument is called a 'keyed harmonica' (*see* KEYBOARD INSTRUMENTS).

The 'nail harmonica', or nail fiddle, which was fairly popular in the 18th century, had a semicircular sounding board on the curved edge of which were nails of graded sizes, tuned to produce the musical scale. The player held the instrument in the left hand, while with the right he vibrated the nails with a resined bow.

HARMONICS, *see* MUSICAL INSTRUMENTS; *See also* Vol. III, SOUND; Vol. VIII, ACOUSTICS.

HARMONIUM, *see* REED ORGANS.

HARP. The harp is one of the earliest of all instruments. Paintings of it have been discovered in the cemeteries of Thebes dating from the 13th century B.C. It was played by the Greeks and Romans, and in the Old Testament we read of it as the instrument with which David soothed the frenzy of King Saul. It came to Britain early, and was particularly associated with the musical life of Ireland and Wales. The Welsh bards were famous harpists, and in the noble families of Wales, hereditary harps were handed down from one generation to another. The triple Welsh harp with its three rows of strings is still heard frequently to-day. In Victorian times in England playing the harp was considered a useful and graceful accomplishment for the ladies of the family.

The harp consists of a series of strings drawn over an open frame, the strings being vibrated by the fingers (see Fig. 1). The single-action harp, invented in the early 18th century, made use of pedals by which each string could be shortened, and raised in pitch a semitone. The orchestral or double-action harp, introduced by Erard about 1810, has seven pedals, by the use of which the strings can be raised in pitch by a tone or a semitone. Without the use of pedals, the strings of the harp are tuned to the scale of C Flat Major. If the C pedal is raised by one notch, all the C flats are turned into C naturals; if the pedal is raised by two notches they are turned into C sharps. Thus by the use of the pedals, it is possible to play all the notes of the chromatic scale throughout the full compass of the instrument.

The harp was used in groups of instruments at the beginning of the 16th century in Italy; but later it almost disappeared from the orchestra. It was not used at all by Bach
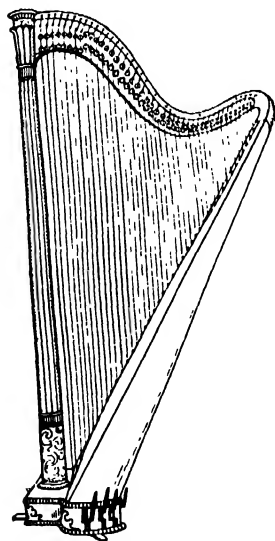
FIG. 1.

and only a few times by Handel. Haydn and Mozart did not use it in the orchestra, although Mozart wrote a *Concerto for Harp and Flute*. Wagner, on the other hand, used it freely, and in his opera *Rhinegold* wrote parts for six harps. It is frequently used in both the chamber and orchestral music of the late 19th and 20th centuries. The silvery tone of the harp is very pleasing, and in orchestral music a touch of it may have a vivid and brilliant effect. Glissandos—produced by rapidly drawing the finger over a group of adjacent strings—are a characteristic feature of harp playing.
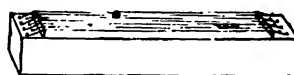
Music for the harp is written on two staves, as for the pianoforte, and apart from trills, shakes, and repeated notes, the harp can play almost with equal ease any music suitable for the piano.

FIG. 2.

The Aeolian Harp (see Fig. 2) consists of a wooden resonance box across which are stretched a number of catgut strings tuned to a varying pitch. The sound is produced by the wind blowing through the frame and so vibrating the strings. The strings are not plucked. The instrument was known in the 16th century but it probably existed in various forms from the early beginnings of music.

HARPSICHORD, *see* KEYBOARD INSTRUMENTS.

HARRIERS, *see* HARE HUNTING.

HARROW FOOTBALL. This game, which is peculiar to Harrow, seems to have been evolved to suit the heavy soil of the School grounds at the foot of Harrow Hill. Inter-house matches are played in the Easter term, culminating in the final or 'Cock House' match. The field is the same size as for ASSOCIATION FOOTBALL (q.v.); the goals, called 'bases', are marked by posts as in the RUGBY game (q.v.), but without the cross-bar; and the ball, which is rather larger than a soccer ball, has two flattened ends— like a cheese. A team consists of three 'backs', two pairs of 'wings', and four 'centres' (forwards). The game has elements in common with both soccer and rugger. Attack is made by the pack of forwards, dribbling the awkwardly shaped ball forward in rushes or, more rarely, by passing. The main feature is the giving of 'Yards'—scooping the

ball up with a light kick so that it can be caught by a supporting player. The latter calls 'Yards', and is then entitled to a clear radius of three running yards—or steps—within which he may take a free 'punt' (kick), or dribble unobstructed. Charging, tackling as in soccer, fast-running, and, above all, accurate catching are other points in the game.

See also ETON FOOTBALL; WINCHESTER FOOTBALL.

HAUTBOYS, *see* WOOD-WIND INSTRUMENTS.

HAWKING, *see* FALCONRY.

HENLEY REGATTA, *see* BOAT-RACES.

HIDE-AND-SEEK, *see* HIDING GAMES.

A GAME OF HOODMAN BLIND IN THE 14TH CENTURY
Marginal drawing from the *Romance of Alexander*
(*c.* 1340). MS. Bodl. 264

HIDING GAMES. These are among the oldest of all games, for the idea behind them is simple and primitive—indeed the Peek-a-bo or Peep-O type of game is played instinctively to amuse a small child even before it can speak. There are three main types of hiding games: Hide-and-Seek, in which one or more people hide from the rest; Blindman's Buff, in which several people hide from one who is blindfolded; and Hunt-the-Slipper, in which an object is hidden.

Hide-and-Seek, in origin an imitation of hunting, is extremely old, and is mentioned by Shakespeare as an 'old infant play'. There are many variations, and it was often played to the accompaniment of rhymes and songs. In the most general version, one player hides and then cries out to show that he is ready. The others look for him, and when they find him, he tries to reach 'home' without being caught. In other versions all the players hide but one, who is the 'spy'—from this comes a Scottish name for the game, 'Hospy' or 'Ho, Spy!'. In one version of Prisoner's Base half the players hide and the other half seek. If a player is caught he is sent to prison, from which he can be released by one of his own side. This game, if played all over the house in the dark, can be very exciting. In a modern form, Sardines, one player hides and each of the others, on finding him, joins him in his hiding-place until they are all packed in like sardines, with only one seeker left. Murder, another modern hiding game played in the dark, has borrowed its form from the conventional detective story. Everyone hides, and the murderer (chosen secretly by lot) pretends to 'murder' one of the other players, who screams to show

that the murder is committed. One player acts as detective, and the fun consists in his attempts to discover the murderer by investigating the hiding-places and questioning all the players. Everyone, except the murderer, must stay where he is when the lights go up; the murderer, also, is the only player who may attempt to deceive the detective.

Blindman's Buff is believed to be connected with ancient sacrificial rites in which the victim was blindfolded. It was certainly played as a game in the Middle Ages, and was called Hoodman Blind, for the victim had his hood pulled over his eyes. The blindman tried to catch the other players, while they teased him with blows and deliberately tried to deceive him—hence the expression 'to hoodwink'. The name Blindman's Buff probably came in when hoods were no longer worn, 'Buff' or 'Buffet' referring to the blows the victim received. The game is still played in a similar way. There are many variations, such as the child's game Squeak, Piggy, Squeak, in which the child tries to identify its playmates from their voices which they disguise; and the Queen of Sheba, in which the blindfolded victim is led to believe that he is climbing over obstacles which are not really there, in order to reach and kiss a lady, 'the Queen of Sheba', who is replaced by a man at the last moment.

There are innumerable games which depend for their fun upon the hiding of an object. The simplest and probably the oldest is Handy Dandy, in which the seeker must decide which of two hands holds the treasure—a game mentioned in the medieval poem *Piers Plowman*. Hunt-the-Slipper, which is also very old, was originally a

kind of song and dance. Sometimes the slipper is passed behind the backs of the players, who stand in a ring, and the seeker tries to catch it as it moves from one to the other, or to guess who has it. Alternatively the players sit cross-legged on the floor and pass the slipper round quickly under their legs. The seeker, singing the old words to the game, 'Cobbler, Cobbler, mend my shoe and bring it back by half-past two', persistently inquires for the shoe, but is put off with various excuses, until finally he begins to hunt for it. A similar game is played with a button on a string, or with a ring, to the accompaniment of some such song as 'The Noble Duke of York'. When the music stops, the seeker tries to guess who is 'palming' the object. Tip-it is played at the table, an object being passed under the table from player to player, until at a given challenge all lay their hands on the table. Then the guessing begins. A more complicated version is Up Jenkins, in which the seeker challenges the other players to perform a set of actions with their hands to make them reveal the object, usually a sixpence.

In other hiding games, of which the simplest is Hunt-the-Thimble, the object is hidden somewhere in a room. In Hunt-the-Thimble, the thimble must always be visible, and the seeker is told that he is 'cold' or 'hot' according to whether he is going away from or towards it. A more complicated version of this hiding game is the Treasure Hunt (*see* TRACKING GAMES).

See also PARTY GAMES.

HIGHLAND DANCES, *see* FOLK DANCING, BRITISH, Section 2; HIGHLAND GAMES.

HIGHLAND GAMES. These meetings are held annually in various places in the Scottish Highlands, notably at Braemar, Aboyne, Inverness, Luss, and Oban. They are also known as Highland Gatherings: the oldest and most famous meeting at Braemar is normally called the Braemar Gathering, while the Aboyne meeting is known as the Aboyne Games. These Gatherings or Games are held in the autumn when the mountains are ablaze with heather, making a magnificent background to the pageantry.

The Braemar Gathering is not only the oldest but also the most traditional. It is believed to have had its origin in the 11th century in a race arranged in that neighbourhood by King Mal-

colm III of Scotland (son of King Duncan murdered by Macbeth), the reward of the winner being an exquisite baldric and sword and a purse of gold. It was not until 1816, however, that the Braemar Royal Society was founded and became responsible for the organization of the Gathering. The Braemar Meeting increased in popularity after 1843 when the Royal Family took up autumn residence at Balmoral Castle nearby and made a practice of attending the Games. A famous feature of the Braemar Gathering is the march past of the clans associated with that part of Scotland—the Duff Highlanders, the Invercauld Highlanders, and the Balmoral Highlanders. Led by their pipers, dressed in their kilts, tartan plaids, and plumed bonnets, and carrying traditional claymores and Lochaber axes, the clansmen march round the arena and salute the King.

The Northern meeting at Inverness was instituted as a purely social affair as early as 1788, and did not include Games proper until 1840. The Luss Gathering held its first meeting in 1875. Originally prizes at the Highland Games were not of money; at the first Inverness Games, for instance, the prizes for the playing of pibrochs

PUTTING THE HEAVY STONE AT THE ABOYNE GAMES, 1947
Sport and General

(classical bagpipe music) were a set of bagpipes, a silver brooch, a silver-mounted snuff mull, a dirk (traditional Highland dagger), a sporran, belt, and buckle.

The features common to all Highland Games are bagpipe and Highland dancing competitions and the performance of heavy athletic events—some of which, such as tossing the caber, are essentially Highland in origin. All competitors in these events wear Highland dress, as do most of the judges. The games take place in a large roped-off arena, behind which spectators either sit in stands or on the grass. Several events take place at the same time: pipers and dancers perform on a raised platform beside which sit the judges: elsewhere in the arena athletes toss the caber, put the weight, throw the hammer, and wrestle. There is also a competition for the best-dressed Highlander.

The most serious competition is the playing of the pibroch (in Gaelic spelt *piobaireachd*) which is sometimes called the *ceol mor* or Great Music. The art of composing and playing the pibrochs has been handed down through the centuries by the pipers of the clans. One of the greatest of pibroch players was MacCrimmon of Skye,

who was the piper of the Clan McLeod. Two of his famous pibrochs are *The Lament for the Children* and *MacCrimmon's Farewell*. Pibroch music is complex and cannot easily be understood by the uninitiated. The rhythm of the *ceol beag*, or Little Music, is more direct and simple. It consists of marches, strathspeys, and reels.

Highland Dancing is performed to bagpipe music (but only *ceol beag*) by men and women—though the latter are excluded at Braemar and Oban on the ground that Highland Dancing was originally a warriors' pastime. The chief dances performed at the Games are the Sword Dance, the Foursome Reel, the Reel of Tulloch, the Highland Fling, and the Seann Triubhas. In the Sword Dance any competitor touching the crossed claymores round which the dance is executed is disqualified (*see* FOLK DANCING, Section 5).

The heavy athletic events consist of Throwing the Hammer, Putting the Weight, and Tossing the Caber. A caber is the lopped trunk of a fir tree, like a telegraph-pole, about 14 feet long. It is placed in an upright position in front of the competitor, who bends down, grasps the heavy

DANCING THE SEANN TRIUBHAS AT THE ABOYNE GAMES, 1947. *Sport and General*

TOSSING THE CABER AT THE ABOYNE GAMES, 1947
Sport and General

end in his hands, and raises it vertically off the ground. He then moves off slowly, increasing his pace until the caber begins to lean forward ahead of him. Then he tosses it with all his might so that the thin end hits the ground first and the heavy end falls beyond it. The farthest toss wins the contest. Tossing the Caber demands great strength and skill, and it often happens that pieces have to be chopped off the caber before even the strongest competitor can toss it at all. Highland Games also include Cumberland Style WRESTLING (q.v.), and generally many of the ordinary events of an Athletics Meeting, such as flat-races and long and high jumping (*see* ATHLETICS).

See also BAGPIPES.

HIKING, *see* WALKING.

HILL-CLIMBS. To be of practical use a motor-car has to climb satisfactorily the hills it encounters in the normal course of travel. In the early days of motoring hill-climbing contests were staged at frequent intervals, and did much to improve motor-cars. As cars grew more efficient, they found the ascent of steep gradients much easier, and hill-climbing as a contest had to change its form. It has now become a test of the speed with which different cars can be driven from bottom to top of hills. By dividing cars into suitable classes, or by

applying a formula so that different-sized cars could compete on a level basis, valuable information was obtained.

At first, ordinary hills on public roads were used for hill-climbing tests, the local police usually turning a blind eye; but as speeds increased and famous racing cars were attracted to these events, the tests became a danger to the public. In 1924 a competitor ran off the road and injured an onlooker; and after this the R.A.C. decided to prohibit all public-road events. But the sport continued to flourish over private courses. The most famous speed hill-climb in England is at Shelsley-Walsh in Worcestershire. The first climb was held there in 1905, when Instone's 35 h.p. Daimler made the fastest ascent in 77·6 seconds. To-day, the Shelsley-Walsh record is held by the hill-climb 'ace' Raymond Mays, whose E.R.A. car has covered the 1,000-yard course, with its tricky 'S' bend half-way up, in 37·37 seconds. Another hill, Prescott, in Gloucestershire, has been the scene of many exciting meetings. Here, again, Raymond Mays with his E.R.A. holds the record, in 46·14 seconds, over a course also 1,000 yards long. Similar speed hill-climbs are popular on the Continent, mostly over far longer and more twisting courses. In Ireland hill-climb meetings are held at Craigantlet. Hills are also used as the main hazard in road trials—but in this case what counts is the ability of a car to climb a steep gradient made difficult by a loose, and often very muddy surface. A hill-climb is usually a speed climb over a private road, with competitors divided up according to engine size and whether they are driving sports or racing cars; prizes are given for the fastest ascents in each class.

See also MOTOR-RACING; MOTOR-CYCLE RACING.

HOCKEY. This game, which is equally suitable for men and women, is played like ASSOCIATION FOOTBALL (q.v.) by two teams of 11 players each, usually consisting of 5 forwards, 3 half-backs, 2 backs, and a goalkeeper. It is played on a rectangular ground, marked as in the diagram. The object of the game is to strike the ball into the opposing side's goal from within the striking circle. The goal posts are 4 yards wide and 7 feet high. The stick usually has a cane handle and an ash head with a flat face and a rounded back. The ball may be hit only with the flat side. The blade must not be more than 2 inches

across nor the weight more than 8 ounces. The ball used is the same as a cricket ball in weight and size, but is painted white.
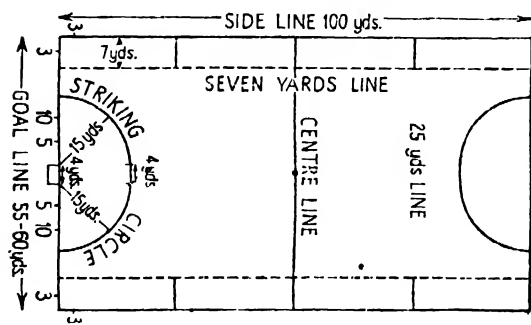
The game consists of two periods of 35 minutes each, and is started by one player from each side 'bullying' in the centre of the field. In a bully each player, standing squarely facing the side lines with his own goal on his right, taps the ground on his side of the ball, then his opponent's stick above the ball, three times in quick succession; then one of these two players must touch the ball before it can be considered in play. The bully in the centre also starts play after half-time and after a goal has been scored; and a bully is taken on the defender's 25-yard line when the ball has gone over the goal line off an attacker's stick. When a player puts the ball out of play over the side lines, it is put in play again by a member of the opposite team, who rolls it from outside the side line into the field of play; all other players must be behind the 7-yard line and may go for the ball as soon as it has left the thrower's hand.

The ball may be caught and dropped perpendicularly or stopped dead with the hand; but it must not be thrown. It may not be stopped by the foot or legs, and must not be kicked. The only person who may kick the ball is the goalkeeper, and he may do so only in the striking circle. When striking the ball, no part of the stick may be raised above the shoulder, nor may the ball be undercut. Hockey should be played on the ground, and hitting the ball into the air is considered dangerous play, and is penalized if done purposely. Most of the rules, including the complicated off-side rule, are the same as in Association Football. In general a player is off-side if he receives a forward pass from a member of his own side when, at the moment of his colleague's hitting the ball, there were fewer than three of the opposing team

between him and the goal he is attacking. He may, of course, carry the ball through himself, or he may hang back, and then dart forward after his colleague has hit the ball; but he may not wait forward for the ball.

Penalties for infringement are free hits, penalty corners, and penalty bullies. Free hits are awarded for fouls in any part of the field other than the circle. 'Short corners' are awarded against defending players when they infringe the rules inside the circle. 'Long corners' are given if the ball goes over the goal line off a defender's stick when he is between his 25-yard line and goal line. For a corner all the defending players must remain behind the goal line until the ball is hit, while the attacking players must remain outside the circle. One player from the attacking side takes a free hit from the side or goal line within 3 yards of the corner flag (long corner), or from the goal line at least 10 yards from the goal post (short corner). One of the attacking players tries to stop the ball and shoot for the goal before the defending players can run out and stop him. The player taking the corner, or, indeed, any free hit, may not touch the ball again until it has been touched by another player. A penalty bully is usually awarded when an almost certain goal is stopped by a foul on the part of a defender. It is taken on a spot 5 yards in front of the centre of the goal line by the offending player and any member chosen by the attacking team. No other player may touch the ball during the penalty bully which continues until the ball is hit out of the circle, over the goal line, or a goal has been scored. Unless a goal has been scored, the game is restarted by a bully on the 25-yard line.

As in Association Football, the inside-forwards and centre-half have the most work to do, as they must be up in attack (the latter to support his forwards) and also back in defence. It is usual for the wing-halves to mark the wing-forwards, and the backs to mark the inside-forwards, leaving the centre-forward to be marked by the centre-half. Players on the left side of the field—the left-wing and inner, left-half, and left-back, have the difficulty of passing the ball to the right without using the back of the stick. Short passes from left to right can be made by twisting the wrists and shoulders to the right so that the blade of the stick is brought round in that direction, and then flicking the ball to the right. Long, hard passes to the right can be made

SIDE LINE 100 yds.
7 yds.
SEVEN YARDS LINE
STRIKING CIRCLE
CENTRE LINE
25 yds LINE
GOAL LINE 55-60 yds.

TWO HOCKEY PLAYERS CLOSE IN UPON THE BALL.
The Indian player on the right wears his long hair tied up in a small turban
Fox Photos

by overrunning the ball a little and then turning to the right to hit. Little passes and stops can be made by reversing the stick so that the end points downwards; but this only gives the 2-inch width of the stick for effective work. Played at its best, hockey is a very fast game in which short and long passing between forwards, and long cross-passes from wing-halves and backs to the opposite wings are the best means of defeating the defence. To play the game well, a good eye and speed, together with neat stick-work, with strong wrists, and skill in keeping the ball under control are essential.

HOCKEY, HISTORY OF. This very popular field game originated in Persia, though the Persian game shows little resemblance to the hockey played to-day. The Old Olympic and Isthmian Games of the Greeks included one in which a ball was struck with hooked sticks; and the Romans played a form of hockey in Britain. In America a stick game was played by Indian tribes for many hundreds of years, the ball being usually made of wood or deerskin, and the stick

sometimes a deer's leg. In Ireland the ancient game of HURLEY (q.v.) was a primitive type of hockey, as were SHINTY (q.v.) in Scotland, and bandy in England and Wales. In the Middle Ages, schoolboys played a game with sticks and a ball called 'The London Balle Playe'; but it was more of a rough-and-tumble than anything else.

The modern game dates from the middle of the 19th century. At that time, positions on the field and the number of players on a side varied. String balls and ash sticks were used, and the game was fast, with hard hitting and long passes. The first organized hockey club, the Blackheath Club, was formed in the 1840's. Other clubs were formed, but for some years the game was played under different rules by different clubs. In 1886, however, the rules of the famous Wimbledon Club were adopted by the Hockey Association, and this has remained the ruling body of hockey ever since. In 1887 the blade of the stick was reduced from a width of 2½ to 2 inches to encourage dribbling and passing, and to prevent slogging. With the adoption of one code of rules came the adoption of the 'striking

circle', used by only a few clubs before this. By 1890 the Hockey Association had twenty affiliated southern clubs, and the game had begun to spread to the Midlands, the West, and the North of England   The first divisional hockey associa-

HOCKEY IN THE 14TH CENTURY
Marginal drawing from the *Romance of Alexander*
(*c.* 1340). MS. Bodl. 264

tion to be founded was the Northern Counties H.A. in 1888–9; and in 1890 the first English trial game was played. About this time the Northants Hockey Association wished to be affiliated to the National H.A. and was allowed to do so only on condition that it abolished all cups and prize competitions. This policy has always been retained by the H.A., and consequently hockey is one of the few major games in which there is no trace of professionalism.

In 1895 the first international match was played between England and Ireland. In 1897 the Welsh H.A. was formed, and the next year Wales and England played an international match. An international committee to frame rules for international hockey matches was formed in 1900, Ireland and Wales each sending two representatives to meet three from the H.A. This body was later called the International Hockey Board, and was enlarged when the Scots H.A. was formed in 1902.

The organization in Great Britain was completed when the Southern Counties' H.A. and Eastern Counties' H.A. were formed in 1901 and 1908 respectively, and the Army and Navy formed their own H.A.s which, for trial purposes, were turned into the Combined Services in 1908, and joined by the R.A.F. Hockey Association in 1920. Territorial trials are now held between the Combined Services and the East, North, South, West, and Midland teams, after which

players are chosen for the first English trial, and later for the final English trial, the Probables *v.* Possibles. Nearly every county in England has a team and its own association. Many other countries play hockey, notably India, France, Denmark, Germany, Belgium, Holland, Afghanistan, New Zealand, Australia, and U.S.A. India won the Olympic Games hockey in 1936— indeed, the Indians are the best hockey players in the world.

Women did not play hockey until about 1887, when they started at Oxford at Lady Margaret Hall and Somerville, to be followed by Newnham College at Cambridge in 1890. Four years later the Irish Ladies' Hockey Union was founded, and received a Newnham side who visited Dublin that year. The Ladies' Hockey Association was formed in 1895, adopting the rules of the Hockey Association (who would not recognize it). This new Association was renamed the All-England Women's Hockey Association in 1896 and by 1914 had become stabilized and recognized by the H.A. By 1939 there were 2,100 clubs associated to it. The A.-E.W.H.A., like the H.A., shunned competitions and cups. Girls' schools and ladies' clubs began to take up the game, and County XI's were formed. During the Edwardian era women's hockey was played in Holland, U.S.A., Germany, Switzerland, New South Wales, New Zealand, South Africa, and Russia. England and Dutch XI's visited each other quite often, and international games started during this period, the first being a match between England and Ireland in 1896. International teams have now visited South Africa, Germany, Holland, Belgium, Australia, and U.S.A. In 1927 an International Women's Federation was formed, and international tournaments have taken place at Copenhagen (1933) and Philadelphia (1936). Since 1920 the English Women's XI has lost only one international match—against Scotland in 1933.

Hockey is a regular winter game in boys' schools, Uppingham, Marlborough, and Rossall being the three public schools which have fostered it the most. It is the most generally played game in English girls' schools. Most counties run a one-day school tournament, and junior county teams are chosen from these tournaments—a difficult problem when often there are over a hundred entries. International schoolboy teams have played on the Continent.

See also HOCKEY.

HOLIDAY CAMPS. Camping holidays, which are cheap and healthy, have been popular in this country for at least 50 years. Schools and groups such as the BOY SCOUTS (q.v.) have large, regularly organized camps. During the 1920's, open-air holidays in the country became popular, and large numbers of townspeople formed clubs for WALKING ('hiking'), CYCLING, and CAMPING (qq.v.). The motor-trailer became common, and farmers and landowners near the sea or beauty-spots found it profitable to provide camping sites which could be rented by individual holiday-makers, or by families or clubs. The more enterprising provided such conveniences as drinking-water, communal sanitary and cooking arrangements, and even accommodation— in huts, chalets, bungalows, and cabins.

Although this tendency might be resisted by some other residents and property-owners, it soon became evident that it provided a promising field for commercial development, and by the late 1930's the modern Holiday Camp had appeared. The Holiday Camp provides a very different type of holiday from the simple camping holiday just described. One camp alone may cater for over 1,000 people, and for an inclusive charge, communal and highly organized entertainment is provided, such as dancing, games, tournaments, competitions, cinema shows, concerts, and fashion parades. Meals are taken communally, campers sleep in separate huts, and nurseries are provided so that mothers of young children may be free to take part in any of the camp activities which appeal to them. These camps offer all the pleasures of a large hotel with less expense and in less formal surroundings. Although they appeal chiefly to people who like their pleasures to be organized and who do not stress privacy, their popularity is growing. A number of permanent camps of this kind have now been established in various parts of the coast of Great Britain.

HOLIDAYS. There have always been holidays, but they have not always been of one kind or quality. From age to age they have altered, and they are altering still, even if we hardly notice it. In ancient Rome the main recurring holidays were religious FESTIVALS (q.v. Vol. I), dedicated to one or another of the gods— and until modern

THE BATHING POOL AT BUTLIN'S HOLIDAY CAMP, SKEGNESS
Picture Post

times, holidays have always been derived from sacred feasts or thanksgivings, purely secular occasions like August Bank Holiday being a quite recent development.

The festivals of the ancient world were derived from primitive NATURE WORSHIP (q.v. Vol. I), and were attached to particular seasons and events in the agricultural year: to Midwinter and Midsummer, to the Spring and Autumn Equinoxes, to ploughing and sowing, and the springing of the corn and harvesting. From our point of view the most interesting Roman festival was the Saturnalia, held in honour of Saturn, the god of sowing, which lasted from the 19th to the 24th of December, and was a time of the wildest merrymaking. All the schools were closed, all business came to an end, the army rested from manœuvres, the criminal was safe from the executioner; masters feasted with their slaves, allowing them to say more or less what they liked, and sometimes, in the mad topsyturvydom of that week, even waiting on them at table. Evergreens were put up on all the houses; and there was much giving of presents, especially of wax candles and little clay dolls. It would be a dull mind indeed that could read about the Saturnalia without remembering an English Christmas with its presents and evergreens and candles; while anyone who knows what Christmas in England was like, say, in the 15th century, will see in the Roman slave-turned-master a model for the 'Lord of Misrule', the officer appointed at court or manor house to conduct the Christmas revels, with what liberty he chose to check his betters.

Christmas customs are certainly connected with those of the Saturnalia, though exactly how is a difficult question. Many other festivals of modern history also appear to be in debt to Roman ones: for example, Candlemas and St. Valentine's Day are indebted to the Lupercalia, the February festival of Lupercus, god of nature; Shrove Tuesday with its pancakes to the Fornacalia, a February festival of Fornax, goddess of ovens; May Day to the Floralia, the spring festival of Flora, goddess of flowers; and 'Beating the Bounds' at Rogationtide to the Ambarvalia, a solemn annual purification of the fields. There are two periods in history when Rome might have given us festivals: the first, when Britain was part of the Roman Empire; the second, when the Latin monks arrived to convert the heathen Saxons. Christian festival customs are largely pagan ones baptized, and it might be that the

priests from the South introduced them to us already redeemed in this way. But that explanation is less likely than the other; for popular customs tend to grow from the people rather than be introduced from above by individuals.

Probably the true explanation is that these festivals did not need to come to Britain from Rome at all, but were already here in a cruder form; and under different names they were shared by all the peoples of Europe. Thus the Saturnalia corresponded to Yule; and at Yule, too, there was feasting and licence, evergreens and lights and presents. Thus at the May festival there were garlanded girls in ancient Rome. Girls also paraded at an immense garlanded maypole, called 'Irminsul', not far from the mouth of the Elbe in Germany, where the Saxons lived. It was the policy of the Church to redeem what she could not abolish; and after the conversion of England, most of these festivals were given a higher meaning. Yule became Christmas, and Easter derived not only its eggs and flowers but its very name from the feast of the goddess Eastre. Only May Day and the Harvest Home remained heathen in character, and even these acquired in time a sort of Christian complexion: the May Carol was reworded to speak of sin and repentance; and the Corn Spirit came to church. His image, worked in straw, was fastened to the chancel screen each summer, and there, in the course of centuries, it gradually stiffened into the shape of a Cross.

With these two exceptions, then, medieval holidays were truly enough 'holy days'—though once Mass had been said, there was nothing solemn about the way in which they were kept. By modern standards there were very many of them, for they numbered not only the main festivals of the church, but the days of all the notable saints. It is believed that in the 12th century the holidays of the peasant amounted to 8 weeks in the year; but the medieval peasant had no half-day or day a week, fortnight's summer holiday, or five or six Bank Holidays! Of course the medieval idea of a holiday was very different from our own. Pleasures were homemade, or at best no grander than the local town would afford: dancing, wrestling, cock-fighting, and the thrills provided by itinerant musicians and mountebanks made the day's enjoyment. There was no question of a 'change of scene', and during the holiday periods some work, of course, had to be done, though often it was very little.
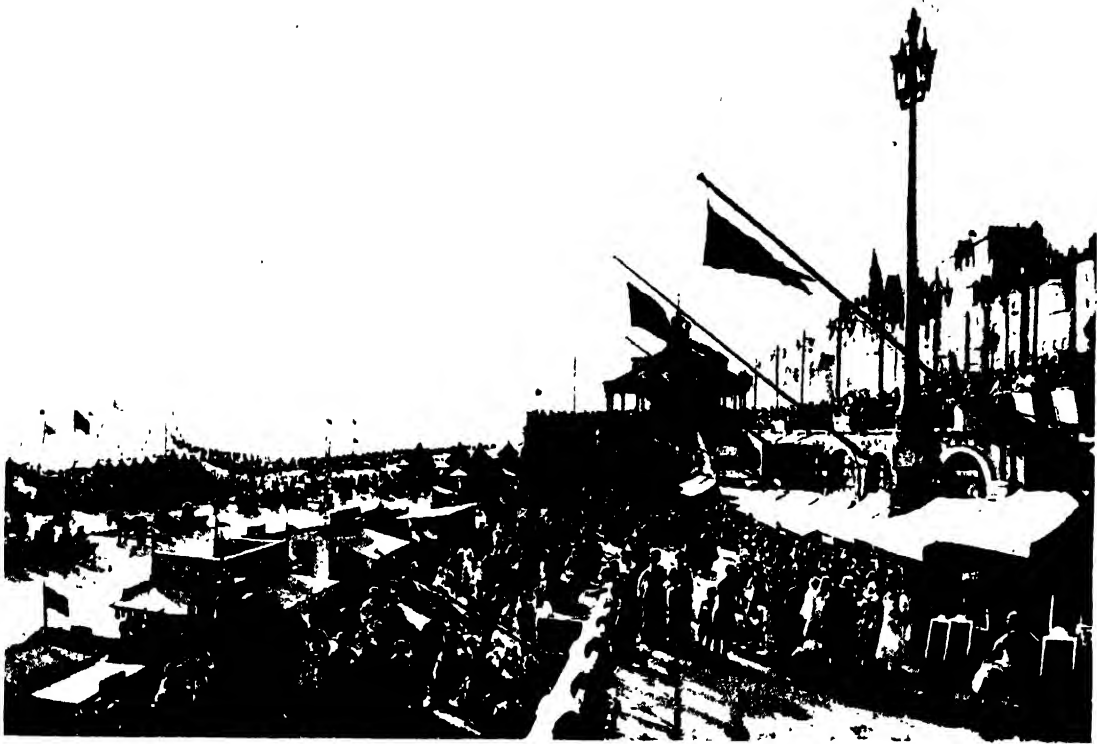
BANK HOLIDAY AT BRIGHTON
Painting by Charles Cundall, *Tate Gallery*

Leisure began to diminish at about the time of the Reformation. The leaders of the Church of England approved of festivals decently kept, with manly sports, and with dancing in the churchyard after Evensong; but they drastically reduced the old Calendar —and with every saint omitted, a holiday vanished as well. The Puritans went much farther: during the Commonwealth they actually abolished all the festivals, including even Christmas. That was more than the people of England would endure. They lost many of their maypoles; but there were ugly scenes when the magistrates' men tramped into church to pull down the Christmas holly.

In 1660, when the King was restored, it seemed as if the 'good old days' had returned; and to celebrate this the largest maypole of all time— 139 feet high—was put up in the Strand, with a great shout and a fanfare of trumpets. Nevertheless, there could be no complete return to the ways of the past. The middle classes had struggled for power during the Commonwealth and the influence of their commercial outlook was strong: industry was becoming the great virtue in commercial England, idleness the great vice. In 1717 a Member of Parliament observed, with much complacency, that the French had at least fifty holidays more than the English, 'and every such day wherein no work is done is £120,000 loss to that deluded people'.

But the age of the machines lay ahead, and the machines, people said, would do man's labour for him. Then there would be leisure indeed. But that promise has taken a long time to be fulfilled. Certainly the machines did not bring greater leisure to those who were first drawn to them out of the poverty-stricken villages. The factory workers of the Industrial Revolution had fewer holidays than any class of Englishman before or since. In the little towns and villages

of the old England life was hard; but there was still, in the 18th century, a reasonable balance kept between work and recreation. In the grey cities that sprang up round the factories the 'Twelve Days of Christmas', Easter week and Whitsun week, the Harvest week, and many isolated days of amusement, were scarcely even remembered after two generations. Needless to say, the better-to-do continued to enjoy a good deal of leisure; but they, too, were more and more involved in the machine of commerce, which had no time for extended holidays. The Bank of England had been accustomed to close its doors on no less than thirty-three saints' days or other anniversaries—by 1834 the number had been reduced to four.

Our modern Bank Holidays were introduced by Act of Parliament in 1871. For England, Wales, and Ireland they comprise Good Friday, Easter Monday, Whit Monday, the first Monday in August, Christmas Day, and Boxing Day; for Ireland alone—St. Patrick's Day; for Scotland—New Year's Day, Good Friday, the first Monday in May and in August, and Christmas Day. Thus religion is still the origin of over half our public holidays.

In the 20th century, especially in recent years,

THE CHRISTMAS TREE
From a Christmas card of 1864

things are improved. Working days are not only fewer than they were in the 19th century but they are shorter. The custom of a 5½ or even 5 day week is general. A holiday now does often mean a change of scene—a refreshing visit to the country or the sea; and that is good for those who spend their lives in dull and mechanical surroundings. Then, while the lesser festivals have withered, the greater ones have added to their beauty and charm. Little more than a century ago the Christmas tree introduced from Germany, by Albert, Prince Consort, was unknown in this island, probably the Christmas stocking as well, and only the very poor remembered the carols which were thought to be dying out. There are many other instances of revival or innovation too many for us to consider them all. There is, for example, the country church, festooned in corn sheaves, flowers, and fruit for the Harvest Thanksgiving—a sight unknown before the reign of Queen Victoria. And then there is New Year's Eve, kept now in London almost as noisily and happily as in Scotland itself. In America, Independence Day, July 4, marking the end of the American War of Independence, is celebrated as a public holiday throughout the United States.

Each festival has a history of growth, decay, revival, or extinction, peculiar to itself; but here we can mention only the broad tendencies. The British are more reserved and self-conscious in public than they used to be. On May Day, in Tudor England, both man and child could dance without restraint around a maypole, crown each other with flowers, and hold all kinds of pageantry in the fields and streets: Henry VIII more than once rode out with his Queen at dawn to see the sport, and to breakfast in a floral arbour. To-day only children can be ceremoniously gay in public. In private it may be otherwise; for there most families enjoy traditional ceremony—their Christmas holly and turkey, their Easter eggs, and their birthday cakes. Each holiday used to be linked to a festival, and indeed to form part of it; to-day, the two elements tend to become divided—the festival to be spent indoors, the holiday as far from the home as possible.

But on the Continent some of the spirit of the medieval holiday is still to be found, especially among Latin peoples who take their pleasures more gaily than Anglo-Saxons. The Feast of Corpus Christi in May or June is a national holiday in some Roman Catholic countries, and it is still a real holy day. Great numbers of

people start their holiday by attending Mass. Processions of priests and acolytes lead the way to the church, swinging the censer and singing, and followed by boys and girls in the First Communion dresses. The doors of the church are wide open, and people come in and out. Mass over, everyone streams out of church to spend the rest of the day and far into the night merry-making in the streets and gardens and cafés, as well as in their homes.

HOP-SCOTCH, *see* STREET GAMES.

HORN, *see* BRASS INSTRUMENTS, Section 2.

HORNPIPE, *see* FOLK DANCING, Section 4.

HORSES. The study of the EVOLUTION (q.v., Vol. II) of the horse is based on an examination of prehistoric skulls, bones, and teeth, and of drawings in caves and, later, pictures on the walls of ancient tombs and royal palaces. There are two main theories about the way the domestic breeds of horses have developed from their remote ancestors. One is that all present-day domestic breeds can be traced back to the Cave Horse, which was almost identical with the Mongolian Wild Horse. The second and more generally accepted view is that they can be traced back to two types, which existed some 50,000 years ago, and which are called the Northern and Southern types.

Each of these prehistoric types has its present-day representatives. From the Northern type descended the Great Horse of Europe, with its influence on the heavy breeds. It was a type suitable for war when men wore heavy armour, and Henry VIII was responsible for fostering its suitability and influence. But these heavy breeds were later crossed with Arab blood, and the result of this fusion was the coach and trotting horse of the 18th century. The Great Horse of Europe is now most purely represented by the Shire and the Clydesdale breeds. (*See* HORSES, FARM, Vol. VI.)

The Southern type, the Arabian horse, was altogether lighter, smaller, more agile, and of a more generous disposition. It is this horse which, while remaining pure bred itself, has had the greatest influence in improving other breeds all over the world when it has been crossed with them. The Arabian is the origin of all our thoroughbred stock—indeed, as Lady Went-

worth has written, the word 'thoroughbred' is a literal translation of the word *Kehilan*, the generic Arabic word for the whole breed.

It seems likely, from drawings and from the remains of horses found in the ruins of human habitations, that 5,000 years ago, when all our modern breeds began to develop from these Northern and Southern types, and when, owing to migrations, they began to influence each other, there also began the process of the domestication of the horse by man. This opens the gate to a fascinating, but immense, field of knowledge, research, and discovery. Here, it is enough to say that the principal human activities which have influenced the development of the domestic horse have been the waging of war, the need for transport, and the pursuit of equestrian sports. At different stages in the history of each, different requirements have bred different types. The heavy coach horse gave way to the lighter mail coach type; the immense war horse of the days of Henry VIII was replaced by the modern cavalry troop horse; while the hunting of deer, fox, and hare has had a great influence in producing light, fast animals.

In this brief account of present-day horses used for recreational purposes it is essential to start with the Arabian horse, for in addition to the purity of the breed, of which the Arab Horse Society is in charge, the Arab horse has influenced, and save in the doubtful case of the cob, influenced for the good, every other breed. Every thoroughbred horse can be traced back to three Arabian sires in the male line: these are the Darley Arabian, the Godolphin Arabian, and the Byerley Turk. Every thoroughbred can also be traced back to a small number of Arabian foundation mares. Most racehorses, therefore, have Arab blood in their descent. (*See* HORSE RACING.)

There are several types of hunters, ranging from the small cobby type suitable for close and mountainous country (such as North Wales and parts of Devonshire) to the thoroughbred associated with hunting in Leicestershire and Northampton. They can be traced back to the Southern type, but now have less of the Arab appearance than they had 200 years ago. A most successful scheme for the improvement of the breed of hunters—which also benefits hacks and riding horses generally—is that operated by the Hunters' Improvement and National Light Horse Breeding Society. This scheme, known as

SHETLAND PONIES
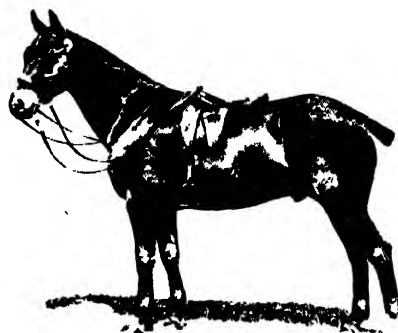
ENGLISH COB
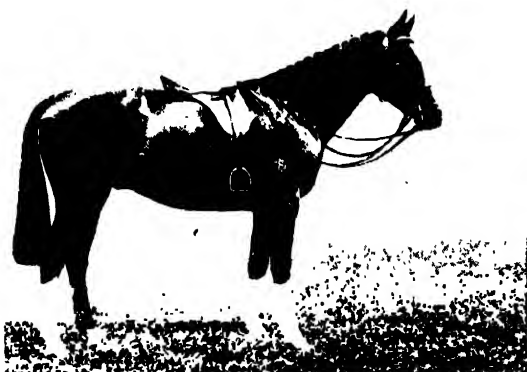
HACK HUNTER   *W. W. Rouch and Co.*

EXMOOR PONY

the Premium Stallion Scheme, provides a good class stallion in every light horse-breeding district of the country. The hack, which is purely a riding horse as opposed to the hunter, is, nevertheless, as regards its breeding, similar to the hunter.

The cob is one of the most attractive animals, although many different types have gone to produce it. Invariably, the cob can be traced back to one of the nine breeds of mountain and moorland ponies, and, in nine cases out of ten, to the Welsh pony mare. The characteristic of the cob is that he should be able to carry a heavy rider all over the roughest country, and the best of them make admirable hunters in most rough country. Arabs have occasionally been crossed with the native pony mare to produce the cob, but the most successful sires have come from eastern England. The society in whose care the welfare of the cob rests is the Welsh Pony and

Cob Society—a name which emphasizes the cob's origin.

The hackney and trotting horses had the same eastern origin, but Arab and Spanish blood has influenced the hackney, whereas the trotting horse was influenced by Scandinavian blood. The hackney is now confined almost entirely to the show ring, where, with its wagon, it is always one of the most popular features. Modern roads are no place for it. The outstanding characteristic of the hackney is its action. When moving, its forelegs are raised extremely high, and the sign of a good mover is that its hind legs are raised high in proportion. The Hackney Horse Society has divided the breed into two groups—horses and ponies. A hackney horse is over 14·3 hands (a hand measures 4 inches), and a pony is up to 14 hands.

The trotting horse (*see* TROTTING RACES), no less than the hackney, suffered from modern

roads, and no longer exists in the sense in which it did when famous trotters came largely from Norfolk. The best of them could trot at 17-20 miles an hour, and perhaps the most famous was the Original Shales, whose influence on the hackney was immense. In this sense, it cannot be said that the breed is extinct.

. The remaining types of recreational animals consist of the pony breeds, of which there are nine. The polo pony is not to be included in their number as, apart from his height, which is above that allowed for any mountain and moorland pony, he represents the fusion of a great many strains (see POLO).

The original pony stock was, like the horse stock, divided into Northern and Southern types. Those represented now in the British Isles, which are probably descended from types once occupying a much wider area, are the Connemara, the Dales, the Dartmoor, the Exmoor, the Fell, the Highland, the New Forest, the Shetland, and the Welsh. It used to be thought that the Shetland Pony was the only completely pure pony representing a prehistoric type; but recent research has made it at least probable that the Exmoor pony enjoys the same distinction. All the other breeds are, it is admitted, the better for other blood --notably Arabian, which was introduced to this country centuries ago by traders.

The Connemara pony, which is 13-14 hands high and is frequently grey, comes from Connaught, and the wild nature of the country, which lies west of Lough Corrib and Lough Mask, has not only produced but maintained its hardy qualities. The same might be said of the country from which the Dales come—the higher parts of Yorkshire, Westmorland, and Nor-

HACKNEY SHOWING TROTTING ACTION
The famous 'Black Magic of Nork'.   *W. W. Rouch and Co.*

thumberland. The Dales ponies are generally some few inches higher than the Connemara. The Dartmoor is a smaller breed, the maximum height being 12·2 hands. The Fell ponies live in districts west of the Pennines, and the Highland breeds come from the more rugged parts of Scotland. The New Forest ponies may frequently be seen at large in the streets of towns in or near the Forest, and the Welsh ponies have remained in the mountains of Wales ever since they were driven there by the massacre of all small horses ordered by Henry VIII. All these breeds make admirable children's mounts, and they are also invaluable for crossing with other breeds.

Each breed has its own society, which keeps the stud book and looks after its welfare; and the National Pony Society is an important society, generally interested in the future of all pony breeds.

See also RIDING.
See also Vol. II, HORSE.
See also Vol. IV, HORSE TRANSPORT.
See also Vol. VI: HORSES, FARM.

HORSE-RACING.

Interest in horse-racing is world-wide, but it is probably greatest in Great Britain, the United States of America, Australia, and France. In each of these countries the breeding and racing of horses is an industry as well as being a sport, for there is always a ready market overseas, in such countries as South America, Australasia, Africa, and parts of Europe for stallions and mares to improve the various native breeds. The racecourse is not merely a place for recreation and sport; it is also important as a testing ground of the quality of

HEAVY DRAY HORSES
A famous team of black shire horses.   *W. W. Rouch and Co.*

horses, their stamina and soundness of constitution. As such, it plays a big part in stimulating this very profitable industry. Sales of thoroughbred stock in 1946 were valued at well over £2,000,000, and several stallions at stud that year were each valued at over £50,000.

As horse-racing in Great Britain increased in popularity, a central authority was needed to frame rules and conditions and to ensure that races were conducted on fair and straightforward lines. In 1751 the Jockey Club was founded, an association of gentlemen and noblemen which, with its associate body, the National Hunt Committee, still exercises rigid control over horse-racing. The formation of the Pony Turf Club is a more recent development. Horses racing under the rules of the P.T.C. are the smaller thoroughbreds measuring not more than 15 hands. There are, of course, race meetings which are not promoted in accordance with the rules and regulations of these bodies. They are known as 'flapping' meetings. Horses which have raced at these are not allowed to enter for races promoted by the Jockey Club, National Hunt Committee, or Pony Turf Club.

Throughout England, Scotland, and Wales the Jockey Club is responsible for the conduct of racing on the flat, and the National Hunt Committee for racing over hurdles and fences. In Ireland the authorities are the Irish Turf Club and Irish National Hunt Steeplechase Committee. For many years the conduct of the sport in Britain has been the envy of other sporting organizations throughout the world. Discipline is strict, and there is no appeal against the Stewards' ruling. Almost everyone who takes an active part in racing—clerks of courses, handicappers, starters, jockeys, clerks of scales, judges, and trainers—must have a licence granted by the Jockey Club or National Hunt Committee, and these are granted only on the understanding that the holder subjects himself in all respects to the rules.

The age of a thoroughbred dates from 1 January of the year in which it is foaled, and no horse is allowed to run on the flat before it is 2 years old; 3 years is the minimum age over hurdles, and 4 years over fences. Racing on the flat is over various distances, from 5 furlongs ($\frac{5}{8}$ of a mile) to a little over $2\frac{3}{4}$ miles—the distance of the Queen Alexandra Stakes at the Royal Ascot meeting in June. National Hunt Racing varies from $1\frac{1}{2}$ miles for 3-year-olds over

hurdles to 4 miles 856 yards over fences for older horses—the distance of the GRAND NATIONAL (q.v.). The Jockey Club season usually extends from about the third week in March to the last week in November, and the National Hunt season from August Bank Holiday to Whitsuntide.

Both on the flat and over jumps there are two main types of races, known as 'weight-for-age' events and 'handicaps'. In the former the horse carries weights based on its assumed growth and development from year to year; in the latter the weights to be carried are decided by the handicapper, who aims at equalizing the chances of the horses. There have been occasions when the judge has been unable to separate three horses at the finish, and dead heats between two horses are fairly frequent. In each type of race, horses usually have to carry extra weight for previous successes, and in certain weight-for-age races weights are reduced for horses which have not won previously, or won races of only a small value. In the classic races—Two Thousand Guineas, One Thousand Guineas, DERBY (q.v.), Oaks, and St. Leger—and in the near-classics, there are no penalties and no allowances, save a sex allowance to fillies when they run against colts. When riding on the flat against their seniors in certain races, boy riders (apprentices) can claim varying allowances according to the number of winners they have ridden, and there are other allowances which can be claimed for a horse according to the particular conditions of the race. Over jumps there are allowances to riders who have not ridden fifteen winners.

Besides carrying a certain weight there are usually other conditions for entry to a race. In flat racing there are special races for 2-year-olds and also for other ages. The classic races are for 3-year-olds only, the One Thousand Guineas and Oaks being confined to fillies. There are also races called Maiden races for each age for horses who have not won before. Both over jumps and on the flat there are Selling races, which in practice are confined to rather inferior horses. A condition of entry to this type of race is that the winner must be auctioned on the course as soon as the race is over. The owner can, if he wishes, buy him in. The Selling race is, however, usually regarded as a convenient way of getting rid of a horse that is not much good.

Responsibility for determining the exact weight a horse shall carry in the race rests upon

DONCASTER RACES, 1833
Coloured aquatint after J. Pollard. *Parker Galleries*

the trainer, or whoever may be authorized to act for him, and the weight must be declared by a given time. An official known as the Clerk of the Scales is responsible for seeing that the jockeys are 'weighed out' according to the weights declared. The weight includes the jockey and saddle with blinkers if the horse should be wearing them; it is made up to the exact amount with lead carried in the saddle. If the jockey scales more than the weight the horse should carry, then 'over-weight' is declared and the fact made known to the people on the course. The carrying of over-weight tends to reduce the chance of the horse; but frequently the owner and trainer allow their horse to carry a little more if they wish to have the services of a particular jockey or of one who may give their horse the stronger handling it requires.

After weighing out, the jockey takes his mount to the parade ring, where the horses are walked round. Spectators who have paid for entry to this part of the course can make last-minute bets based on the appearance of the horses. From there the horses proceed to the starting-gate. This is a net or tape which the horses must not pass until it is pulled away by the starter. The course is marked by white posts and railings, and the horses may go several times round according

to the length of the race. The winning-post is marked by a white post with a red circle. The judges' stand is opposite this. Most racecourses in America and some in Great Britain are equipped with a photo-finish camera. This has a special lens, and photographs only a narrow slice of the course just at the winning post. A film in the camera moves at constant speed, and photographs of everything that crosses the strip are taken every $\frac{1}{50}$ of a second. These build up into a continuous film, and the distance between the horses on the film measures the time between them at the winning post. The photo-finish camera can generally establish the winner.

Not more than 5 minutes after the end of the race all jockeys whose mounts have qualified for prize money must weigh in, and they must scale virtually the same as they weighed out. A horse can be disqualified and the jockey fined for foul riding if he is judged guilty of touching another horse, crossing its path, forcing it into the rails, or excessive beating and shouting at his own horse. Exciting a horse with alcohol or drugs, or holding it back so that it runs badly, and therefore gets a more favourable weight in a later race, are also against the rules.

The finances of each racecourse are separate. The entry and gate money go to make up the

prizes and pay dividends to the owners of the course as well. Some racecourses are run by companies; some, such as Doncaster, Worcester, and Lincoln, are owned by the town. Goodwood is owned by the Duke of Richmond, and Ascot by the King. This latter course does not make a profit: all the takings are distributed as prizes or used for improving the course. The Royal family have a box at Ascot, and the meeting there in June is usually attended by the King who drives down the course in an open carriage. He presents the Ascot Gold Cup to the owner of the winner of the principal race. Ascot Week is an important social event.

Training race-horses is a flourishing industry in the villages on the Berkshire and Wiltshire downs, on the downs round Epsom, and round Newmarket. The latter town is an important racing centre, and is the headquarters of the Jockey Club, who own the course there.

There is a race meeting somewhere nearly every day of the year. The most important flat races are the Lincolnshire at Lincoln, the One Thousand Guineas and Two Thousand Guineas at Newmarket, the Derby and Oaks at Epsom, the Ascot Gold Cup at Ascot, the Eclipse Stakes at Sandown Park, the Cesarewitch at New-market, and the St. Leger at Doncaster.

The chief events of the jumping season are the Champion Hurdle Cup, Cheltenham Gold Cup, and National Hunt Chase, all run at Chelten-ham; the Grand National, Champion Chase, and Liverpool Foxhunters' Steeplechase, run at Liverpool; and the Imperial Cup and the Grand Military Gold Cup, both at Sandown Park.

See also GENERAL STUD BOOK; POINT-TO-POINTS; TROTTING RACES; BETTING; HORSES.

THE WINNER OF THE JUMPING CLASS AT THE INTERNATIONAL HORSE SHOW, LONDON, 1948. *Sport and General*

THE DRESSAGE TEST AT THE INTERNATIONAL HORSE SHOW AT WHITE CITY STADIUM, LONDON, 1948. *Sport and General*

HORSE SHOWS. These events fall into three groups. First, there are the shows of the various breed societies, such as the Hunters' Improve-ment and National Light Horse Breeding Society, the Arab Horse Society, the Hackney Horse Society, and also the societies in whose care are the heavy horses —Shires, Suffolks, Percherons, and so on. These shows are, from many points of view, the most important for the future of the horse, but, being specialized, they do not attract very large crowds of spectators.

Secondly, there are numerous County and AGRICULTURAL SHOWS (q.v. Vol. VI), which provide classes for non-agricultural horses. Among the most important of these are the shows of the Royal Agricultural Society of England, the Bath and West, and the Royal Counties. In the non-agricultural classes at such shows are found, each season, some of the best hunters, hacks, cobs, hackneys, and show jumpers.

It is, however, the third variety which con-stitutes a 'horse show' in popular language -- shows with familiar names such as the Inter-national Horse Show, the Richmond Royal Horse Show, the Royal Windsor Horse Show, and the Dublin Horse Show.

At the larger shows the classes contain nearly every breed and variety of horse—riding, jump-ing, and driven. Apart from show jumpers, the animals are judged, first, for their conformity, and then for their performance, the judges examining them, and then either riding or driv-ing them, should they so choose. At the Inter-national Horse Show, held in London, and at others of its importance and size, the classes consist of hunters, ladies' hunters, riding horses, and hacks, Arabian horses, children's ponics,

harness horses and ponies (i.e. hackneys), dressage, and jumping classes. Preliminary judging takes place, and this selects those to compete in the final class, which ends with the award of a championship.

The dressage test is greatly increasing in popularity in this country. It is a competition for the best-trained riding-horse. In the official description of the Prix St. George's Test at the International Horse Show are the words: 'It includes all the requirements of a classical equitation training.' The rider is called upon to demonstrate his mount's understanding of and obedience to all the 'aids' used in RIDING (q.v.). In international shows the 'dressage' test demands the highest possible standard in equitation.

In this country the governing body for show-jumping competitions, both adult and juvenile, is the British Show Jumping Association, and at all shows which are affiliated to the Association the jumping is carried out and judged in accordance with its rules and regulations. Any show, however, can apply to the Association to hold a class or classes in accordance with the rules of the continental Fédération Equestrienne Internationale, and at such shows as the International Horse Show there are numerous jumping-classes under each set of rules. The main differences between the two rules relate to the time allowed for completion of the course, and to differences in the number of faults awarded for each mistake.

At some shows there are classes for heavy commercial horses—those owned by the various breweries are an example—and coaching marathons. At others there are parades of packs of foxhounds and beagles with the huntsmen and whippers-in, and also parades of the different types of mountain and moorland ponies arranged by the National Pony Society. A popular feature of the International Horse Show is the parade of costers and their turn-outs from all parts of London.

See also HORSES; RIDING; GYMKHANAS.

HOUNDS, *see* DOGS, BREEDS OF, Section I.

HUNTING, HISTORY OF. Before primitive man learnt to till the soil or keep domesticated animals, he depended on hunting for his livelihood (*see* PREHISTORIC MAN, Vol. I); and there are still primitive peoples in the world to-day who live mainly on the results of their hunting.

When man began to farm, he continued to hunt to defend himself, his crops, and his livestock from marauders. Hunting in these cases was a necessity and a business. Hunting as a recreation can only exist in a highly-civilized society where there is a section of the community that has both leisure and wealth.

Our knowledge of the hunting sports enjoyed by the ancients comes mainly from the paintings and carvings which they have left behind them. We know that huntsmen in Ancient Egypt formed a whole social class: they either themselves hunted or attended the nobles at the hunt. Arrows and darts, hunting poles, and nets were used; dogs and also other animals, even lions, were trained as hunting animals. The gazelle, stag, wild ox, hare, porcupine, ostrich, wolf, jackal, and leopard were among the animals that were hunted. The sportsman often went hunting in his chariot or on horseback, and he would often turn the quarry by driving his chariot at full speed, or shoot from his chariot with bow and arrow. Hunting scenes are depicted in the carvings of the Assyrians and Babylonians, the lion-hunts being particularly important. Their hunting-dogs were heavy mastiffs, and the javelin and bow were the usual weapons. FALCONRY (q.v.) appears also to have been practised. The Persian King Cyrus in the 6th century B.C. is said by the historian Herodotus to have kept so large a hunting establishment that it took the revenue of four great cities to pay for it. With the Hebrews, also, hunting played a considerable part, as we can tell from constant Biblical references; but they do not appear to have used dogs or horses. Xenophon gives very full accounts of the Greek sports, especially of HARE HUNTING (q.v.) and boar hunting, in both of which the animals were driven by dogs into nets. The Greeks also hunted big game, which they drove into pitfalls or speared from horseback. In Roman times, though various forms of hunting were still very popular, it was less the recreation of the nobility. A Roman philosopher, however, writing in A.D. 120, gave directions for the management of hounds.

In England hunting as a sport was practised with horses and dogs by the Celts even before the coming of the Romans. Several of the Anglo-Saxon kings were great hunters. Alfred was said to be a most expert and active hunter, excelling in all branches of 'that noble art'. His grandson Athelstan forced the conquered Welsh princes to

pay him annually as tribute a certain number of 'hawks and sharp-scented dogs fit for hunting wild beasts'. During the period of the Norman kings harsh forest-laws were instituted whereby poaching was punished by terrible penalties, such as the loss of both eyes or hands or even of life. Nevertheless, there was a great deal of poaching—a couple of deerhounds able to run down and kill the biggest stag being the poacher's equipment, rather than the net and ferret of to-day. There were several royal forests where only the King, or those holding a licence from him, could hunt; and poaching in these was a still more serious crime. No one living near the New Forest, a royal forest, might keep a dog, except one too small to be of any danger to the royal stags. STAG HUNTING (q.v.) was the most

A PERSIAN HUNT IN THE 16TH CENTURY

At the top Persian lords are seen with their falcons. In the bottom left-hand corner a cheetah is being brought out to take part in the hunt. Painting by Rhwaja Abdul Sama, 1593, from the *Khamsah*, a manuscript book. *Dyson Perrins*

important sport, the noble stag being considered the animal most worthy of the hunter's skill. During the early Middle Ages boar hunting was very fashionable. Boars were then to be found in most wooded districts—and England was much more wooded than it is to-day. A boar-hunt was the correct entertainment to offer to any visiting prince or nobleman, and boar's head was the ceremonial banqueting dish of the time. A boarhound was the German mastiff or great dane; but, in fact, any large, powerful dog, preferably with a rough, protective coat, was used. The huntsmen followed on foot, armed with spears. The male wild boar was capable of great ferocity, so that the sport had the spice of danger in it. Boars, and consequently boar-hunting, became less common after the reign of Henry II, though the sport continued into the 17th century. Boars are now extinct in England, though they are still to be found in wooded, damp regions on the Continent, especially in eastern Europe, and are to some extent hunted (with guns instead of spears). Boars are still hunted by mounted huntsmen with spears in the jungles of India, where they abound (see PIG-STICKING); and they are also hunted in the New Zealand bush with dogs and guns.

In the 18th and 19th centuries COURSING the hare with greyhounds and OTTER HUNTING (qq.v.) were both popular. Badger-hunting or digging is carried on to some extent in England, on the Continent, and also in America where the badger is valued for its coat. Small dogs (in Germany, dachshunds) are sent down the badger's 'earth' (or burrow) to drive the animal out and into a sack held at the mouth of the hole. The badger's strong legs and jaws make this otherwise inoffensive animal a formidable opponent. The term 'to badger' comes, not from badger-hunting, but from the very cruel sport of badger-baiting practised in the lower kinds of public houses, until it was forbidden by law in 1850.

From the middle of the 18th century FOX HUNTING (q.v.) became pre-eminently the most important form of hunting in the British Isles. With the evolution of a lighter and faster riding horse, able to sustain a fast gallop and to jump, it was natural that the country gentleman should prefer a faster type of hunting. The fox, though essentially a creature of the woodlands, could be driven fast and straight over open country in which its pursuers could display their skill and

courage as horsemen to a degree not often possible in the woods with the staghounds, or in the fields with the slow, circling harriers. There are to-day about 200 packs of foxhounds, about sixty packs hunting hares, and three or more packs hunting buck or stag.

In most parts of the world, especially wherever English people have settled, some kind of hunting is to be found. Other animals besides dogs have been trained in the pursuit of game. In Africa, for instance, it has proved possible to train a HYENA (q.v. Vol. II) in much the same way as a dog. Cheetahs and ounces (*see* CATS, Vol. II) have been trained to hunt antelope. They are hooded until the game has been sighted, and then, the hood being lifted, they are released and followed by the hunters. When the game has been caught, the big cats are hooded again. In Africa and in Southern Asia, especially India, big game such as lions, leopards, and elephants are hunted in various ways, not only with the gun but also with the camera (*see* BIG-GAME HUNTING). The ostrich is hunted on the open plains by men on horseback who ride it down. Their knowledge of the ostrich's habit of running in a very wide circle enables them to take short cuts, and so wear out their quarry. The jackal is often hunted by English settlers in Africa on the same principles as is the fox. In North America the Eskimoes and Indians hunted the caribou (reindeer) and the bison as a means of livelihood (*see* AMERICAN INDIANS, NORTH, Vol. I), and when horses and guns were introduced by Europeans, these animals were hunted until they were nearly exterminated. In America to-day there are both fox-hunting and stag-hunting, but not to the same extent as in Britain. In South America the Indians hunted the wild llama and the rhea (the American ostrich), using lances and also the lasso. Wild bulls, tapirs, and pumas are now often hunted with the lasso. In Russia and northern Europe, bears, boars, and wolves are hunted, in some places properly trained wolfhounds being used against wolves. In Australia the kangaroo (which attacks and kills domestic dogs, such as sheepdogs) is occasionally hunted, as are the 'brumbies', or wild horses—both by men on horseback.

In the British Commonwealth, and in North America, hounds are sometimes used to follow an aniseed trail, or 'drag', previously laid by a man on his feet. This very artificial type of 'hunting' is enjoyed by mounted followers of the

HUNTING THE WILD BOAR IN THE 17TH CENTURY
Engraving from Richard Blond, *The Gentleman's Recreation*, 1686

hounds in districts where no suitable live quarry is available (*see* DRAG HUNTING).
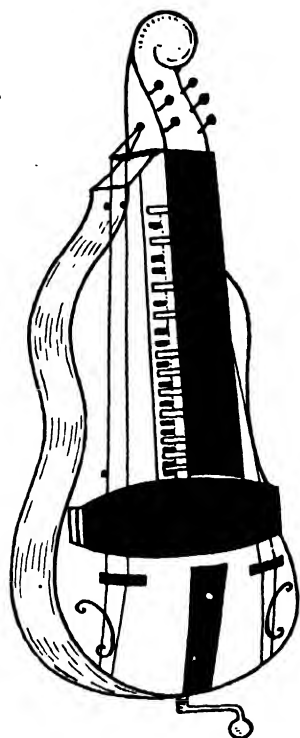
For reasons other than its usefulness in securing food, and in keeping down animals likely to be harmful in some way, the sport of hunting has generally been encouraged in the past by the governments of most countries. It tends to develop a good physique, a manly character ready to meet danger and hardship, and a knowledge of the country and powers of observation—all characteristics valuable in the making of a good soldier.

See also HORSES; DOGS.

HURDLING, *see* ATHLETICS, TRACK EVENTS.

HURDY-GURDY. This is a very old musical instrument, in its original form a stringed instrument shaped like a violin. It is still seen occasionally in the streets to-day. With the right hand a handle is turned which operates a rosined wheel in contact with the strings. The wheel takes the place of the violin bow. With the left

hand the player depresses keys which are not unlike those on a piano (*see* KEYBOARD INSTRUMENTS). The keys in turn work a mechanism which 'stops' the strings in the same way as the fingers of the violinist stop the violin strings. The hurdy-gurdy has four or six strings, two of which produce a continuous droning note like the drone of the bagpipes, while the others supply the melody.

A large type of hurdy-gurdy known as the 'organistrum,' requiring two players, was often used in churches in Norman times. By the end of the 17th century the hurdy-gurdy was popular in France, where it was known as *Vielle* or *Vielle-à-roue*. Some of these instruments, beautifully ornamented and studded with jewels, may still be seen in museums to-day. They were not thought of particularly as street instruments: indeed, in 1786 Haydn wrote five concertos for the king of Naples in which he gave a part to the hurdy-gurdy.

The hurdy-gurdy is not to be confused with the BARREL-ORGAN (q.v.) or the mechanical street-piano, the only similarity between these instruments being that they are played with a handle, and have been associated with street musicians. The street-piano, which came from Italy, is operated on the principle of the barrel and pin. The hammers have hard leather heads, and there is no means of modifying their tone.

See also STREET ENTERTAINERS; STRING INSTRUMENTS.

HURLEY (Hurly). This ancient Irish field-game is something between HOCKEY and LACROSSE (qq.v.). It is sometimes known as 'hurling', but should not be confused with the old Cornish hand-ball game of that name. Before 1884 when official rules were established, there was no fixed size to the pitch, nor any fixed number to a team, and it was often a free-for-all fight.

The field now measures 170 by 100 yards, and the players are limited to fifteen on each side. The goal-posts are 21 feet wide and 16 feet high, with a cross-bar 8 feet above the ground. The stick, called a 'hurley', is made of ash, and rather resembles a cut-down ice-hockey stick; it is 3 feet long, flat on both sides, and ends in an oval-shaped curved blade $3\frac{1}{2}$ or 4 inches wide. It is held with the left hand below the right. The ball, which weighs from $3\frac{1}{2}$ to 4 oz., is either made of rubber or of cork and twine covered with leather. It can be struck, juggled with, or carried on the hurley; it can be caught in the air with the hand, but must at once be played with the hurley. It cannot be thrown nor kicked, unless the hurleys are locked in a scrimmage.

To start the game the teams line up opposite each other on the half-way line, and the referee throws the ball between them. The players, then scattering to their positions on the field, attempt to drive the ball through or over their opponents' goal, the former counting three points, and the latter one point. If the ball goes over the sidelines, linesmen throw it back into play.

Hurley is scarcely played outside Ireland, and even there, since the introduction of rugger and soccer, it is not so generally played. However, it still remains very popular, especially in the south, for it is both skilful and dangerous, and is an excellent game to watch.

See also SHINTY.

I J K

ICE-HOCKEY. This game, which is not unlike Hockey (q.v.), is played on an ice-rink by players on skates. Of Canadian origin, the game has spread in recent years to all countries of ice and snow, including Russia—and with the advent of artificial ice, Great Britain, the United States, Australia, and South Africa have built rinks, adopted Canadian rules, and imported coaches and players from Canada. The true beginning of ice-hockey is not certain, but probably it was started by the British who settled in Canada and moulded their own games to suit the ice and snow of the long winter season. Ice-hockey is played with six a side. The positions are: goal, right defence, left defence, centre, right wing, and left wing. In order to maintain top speed throughout the three 20-minute periods of a match, each team carries at least four substitutes who are interchangeable with the starting team. Players are heavily padded. Forwards and defence men wear fibre shin-pads under their stockings, padded gloves, shoulder-pads, and elbow-guards—and many use helmets to protect themselves from head injuries. The goal-tender, who has to stop a puck that is often shot at him at 125 miles an hour, wears special pads and a chest-protector.

Instead of a ball the game is played with a round 'puck' of vulcanized rubber 1 inch thick and 3 inches across. An ice-hockey stick is much the same shape as a hockey-stick, but is longer handled, lighter, and has flat sides and a flat bottom so that the puck can be hit by either side of the stick and pushed easily along the ice.

Well-played ice-hockey is very fast, some players reaching 25 miles an hour in short spurts. The skill of the game lies in clever stick-handling, which corresponds to dribbling in soccer, positional play, passing, and shooting. The game needs very careful umpiring by the two referees in order to control the rough play such as tripping or illegal body-checking. A player who breaks these rules or argues with the officials may be penalized by being sent off the rink, usually for a period of two minutes.

The professional ice-hockey in Canada and in the United States is still the best in the world. But the game is making considerable strides in Great Britain, despite the small number of rinks. Both England and Scotland have Ice-Hockey Associations and organize national leagues; and matches are played between the universities. In 1936 Great Britain won the Ice-Hockey Olympics for the first time. The game is played at most winter-sports resorts in Switzerland and elsewhere.

See also WINTER SPORTS.

ICE-YACHTING. Yachts designed for racing on ice consist of a skeleton framework with two steel runners on outriggers at each side, and a third astern which acts as a rudder. There are usually two sails, main and jib, and the tiller is long, so that the helmsman can control it with his feet while handling the sheets. *The Icicle*, built in 1869, was 68 feet long and had a sail area of over 1,000 square feet; and Canadian yachts, designed to carry five or six people, are often 40 feet in length—20 or 25 feet is a more usual size, however, and they are normally raced single-handed. Ice-yachts always sail close-hauled, whether into or away from the wind, and considerable skill is needed in handling

AN ICE-HOCKEY MATCH BETWEEN CAMBRIDGE UNIVERSITY AND WENGEN AT WENGEN, SWITZERLAND. *The Times*

them, since they are capable of travelling at over 60 m.p.h. The first ice-yacht club was formed in America in 1861. The sport is also practised in Canada, Norway, Sweden, Holland, and the Gulf of Finland. But as a wide stretch of water and a good thickness of ice are needed, it is uncommon in the British Isles, though small ice yachts have been raced on Esthwaite Water and on Lakes Windermere and Rydal.

See also YACHTING.

INDIAN ROPE-TRICK, *see* CONJURING.

IRISH JIG, *see* FOLK DANCING, BRITISH.

JAVELIN-THROWING, *see* ATHLETICS, FIELD EVENTS.

JESTERS. The ancestry of the court-jester can be traced very far back, but his origin remains obscure. There were jesters at the courts of Ancient Greece, Rome, and Egypt, some of them dwarfs and half-wits, kept as regular members of royal and noble households, and others, like some of the famous jesters of the Middle Ages, true comedians with sharp wits. These often roamed from court to court, attending uninvited

A JESTER AT A MEDIEVAL COURT
15th-century illumination from Froissart's Chronicles
British Mus. Roy. MS. 14 D. v. f. 8

at feasts and public ceremonies, where they made themselves welcome by their gifts of mimicry, story-telling, and horseplay. They seem to have enjoyed the jester's traditional privilege of free speech, and would often make fun of the sages and philosophers. The traditional jester's cap, hooded and surmounted by ass's ears and a cox-comb, may have been worn by court-fools in Ancient Rome and may go back still earlier.

It is quite likely that the jester's privilege of mocking and abusing his master and the company arose from a superstition that this would bring good luck. The wealthy and fortunate may have believed that the jealousy of the gods would be averted if they allowed their actions to be abused and parodied. Thus we find in many festival and holiday celebrations what appears to be a deliberate mockery of serious ceremony, even of religious ritual. Dwarfs and half-wits were probably considered doubly lucky. Human oddity has a strong fascination for primitive people—madmen were once believed to be divinely inspired, and freaks of every kind to be immune from the Evil Eye (*see* MAGIC, Vol. I).

The medieval jester made a special appeal to the popular imagination, and his formal uniform remained medieval in fashion even in later times. Bells, which the jester wore on his cap to attract attention as he leapt and tumbled about, were a common ornament on medieval clothing. His 'motley' (parti-coloured dress) and his cap (called a coxcomb) became symbolic of wit and folly (he was often called the 'fool'), and the word 'cox-comb' came to mean a showy or conceited fellow. The court-jester's uniform was completed by a 'bauble'—a stick with a bladder attached or bearing a carved representation of a jester's head with ass's ears. This he held in his hand as a mock staff of office. The bladder was used to hit and tickle members of his audience, and the carved head probably served sometimes as the other half of a 'cross-talk' act. The jester usually wore a purse at his belt, for he was adept at collecting 'tips'.

The court-jester in Europe is a well-known character from the 12th until the early 18th century, and he still exists in some countries to-day. The heyday of jesters in Europe was in the late Middle Ages and Renaissance period, when they were to be found in royal and noble households in almost every country. Many of them were extremely intelligent people. There

were even many female jesters, the most famous being Mathurine, the court-fool to Henry IV of France, who was a fanatical Catholic, taking an active part in the religious disputes of the day. A few jesters, like their Greek and Roman counterparts, wandered from court to court, almost as strolling actors, for they carried disguises with them, and would tell and enact stories about their own adventures. More often, however, the jester was a permanent member of the household, where he was well cared for and was sometimes on an intimate footing with his master (though his traditional punishment was a whipping if he went too far).

Many jesters, like Feste in *Twelfth Night*, were accomplished singers, musicians, or even poets, fulfilling a double function as jester and court-MINSTREL (q.v.). Occasionally they were highly educated men: John Scogin, for instance, fool to Edward IV, had formerly been a scholar of Oxford; and Henry I's jester, Rahere, founded the priory of St. Bartholomew, and ruled there as prior for 22 years. Often the court-fools, like those whom Shakespeare depicts, used their 'foolery' as a useful and safe way of expressing their opinions about the life and people round them. Some famous jesters, in fact, directed their talents for mockery and mimicry against special enemies: Will Somers, fool of Henry VIII, was said to have a gift for improvising pointed little rhymes, in which he vented his particular dislike of Cardinal Wolsey. Archibald Armstrong, jester at the court of James I, became so influential in public affairs that he was used as an intermediary for presenting petitions to the King. In Charles I's reign, however, he was banished for making indiscreet jokes against Laud, the Archbishop of Canterbury.

By the end of the 17th century the popularity of jesters was waning. The courts and aristocratic households were no longer the isolated communities which they had been, and other means of entertainment, such as printed books and the theatre, were available. Puritanism, too, helped to bring about their decline. In Russia, however, at the court of Peter the Great, all kinds of professional buffoons were to be found until well into the 18th century. There were still jesters in parts of Russia, even in the 19th century. There were none in France after the Revolution. In England the office of court-fool closed with the death of Charles I, but private fools were still sometimes kept in aristocratic households. Dicky

Pearce, the half-witted fool to the Earl of Suffolk, who died in 1728, was the last recorded of the English jesters.

See also CLOWNS.

JEWS' HARP. This is a small instrument consisting of a metal frame roughly circular in shape, usually 2 to 3 inches in diameter (see diagram). It is fitted with a spring 'tongue' which vibrates when plucked by the finger. This plucking of the tongue can produce only one note, which acts as a drone; but when the instrument is held between the teeth, the mouth acts as a resonating chamber so that the harmonics of the note can be produced. Actual melodies can, therefore, be played with the drone accompaniment. The instrument is not, however, capable of producing a great variety of tone-colour.

The jews' harp is of great antiquity and has been known in Asia and Europe. A Chinese writer of the 12th century shows a picture of a jews' harp which is similar in shape to that known to-day. It appears in some pictures by Breughel (1525–69) and other Flemish painters. In the 17th and 18th centuries it was used a good deal for dancing in Scotland, and it may have been known there before the BAGPIPES (q.v.). Among the most famous performers of the jews' harp in the late 18th and early 19th centuries were Franz Paul Koch and Eulenstein. Some of the players used to play on two instruments together, probably with vibrating strips of different lengths and tensions.

The origin of the name is not known; but it is not, however, a corruption of jaws harp, for in Germany it is known as *Judenharfe*, which is an exact translation of jews' harp. It is known by other names such as Jews' Trump and Gewgaw (in northern England). During the early English settlement in America jews' harps were used as a medium of barter, and they may have been used similarly in South Africa.

See also MUSICAL INSTRUMENTS.

JIGSAW PUZZLES, *see* PUZZLES.

JUGGLERS. We now use the word 'juggler' of an entertainer who performs feats of dexterity
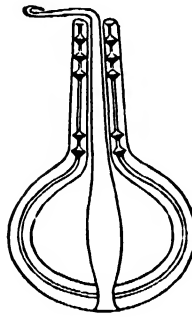
—for instance, keeping a number of balls moving through the air as he throws them from hand to hand. It comes to us from the French word *jongleur,* applied generally in the Middle Ages to strolling entertainers, who did many things besides 'juggle' in the modern sense. Some of them were conjurers— from which comes our use of the verb 'to juggle', meaning 'to deceive'. The word is still sometimes used in a general sense for tumblers and conjurers also.

Like acrobatics and conjuring, juggling excites admiration by its difficulty, and demands the closest attention for its finer points to be appreciated—it requires enormous skill and precision, for instance, to keep as many as eight or sometimes even nine balls in motion. The juggler sometimes juggles with his feet, and also uses head, neck, nose, or chin for catching and balancing his objects.

Juggling is an ancient form of entertainment, practised especially in the East. The 'jongleurs' of the Middle Ages were resourceful masters of a very popular profession; they juggled with knives, balls, and wheels, and are often depicted with spears balanced on their noses. With the decline of these wandering entertainers juggling became mainly a feature of the FAIRS (q.v.) and later of theatrical shows. In the 19th century it became popular in the new forms of entertainment, such as CIRCUSES and MUSIC HALLS (qq.v.). Here the performances had great variety—there were jugglers from China and Japan who performed such feats as twiddling saucers on the tips of long wands, or tossing balls about on batons held in their teeth, and other performers who caught heavy weights on the spine or neck, or whirled things from hand to hand whilst cycling. One of the most outstanding jugglers was Cinquevalli, who performed at the London music halls from 1890 to 1919. He called himself 'the human billiards-table' and, dressed in green with string pockets at his waist, he juggled with ivory balls, which he could make roll or fly as he pleased. He was also a 'strong man', able to toss a cannon ball in the air and catch it in the nape of his neck. A still greater performer was Rastelli, in the early 1920's, who could whirl nine balls or plates, and roll a large glossy ball from his head to his feet and back again while he stood, sat down, turned over, and stood again. At the end of his performance he would make various objects revolve by using head, hands, feet, and a baton held in his mouth.

One of the most famous jugglers of the halls was Gaston Palmer, who threw spoons in the air and caught them in a row of tumblers. Among comic jugglers was Rich Hayes, who appeared as Robinson Crusoe on an island where he found everything he needed on trees, including a boot to kick himself with should he let anything fall.

Silent entertainment of this kind became less popular with the development of radio and talking-films, but in television it shows signs of coming into its own again.

See also ACROBATS; CONJURING; STREET ENTERTAINERS.

JU-JUTSU, or Judo, is the Japanese science of self-defence without weapons, which may have been learnt originally from the Chinese. It is a complicated, highly skilful form of wrestling, in which none of the usual wrestling rules are recognized. When used seriously, it is extremely dangerous, and can result in loss of life or, at the best, broken or dislocated limbs; but when practised as a recreation, the strangleholds and limb-locks are relaxed at a sign from one of the antagonists.

The training for ju-jutsu, which consists of plenty of fresh air, deep-breathing exercises, and certain gymnastic exercises, is very valuable. Tripping and throwing are essential features, and the expert has an extensive repertoire of throws. It takes much practice to develop the necessary agility and command of balance and, above all, skill in destroying the opponent's balance. Although considerable strength is required for some of the feats, accurate timing is even more important. Frequently a clever wrestler can overthrow a much stronger and heavier opponent. The guiding principle of ju-jutsu is never to oppose force by force, but to yield to an opponent's attack, and so take advantage of his movement to bring about his fall. When the defender bends or steps back before an attack, he adds to the attacker's momentum and so increases his tendency to lose perfect balance. Thus defence may be turned into attack by the skilful use of leg and foot movements which continue the original attacker's movements.

Throws take place with swiftness and great force; but their severity is minimized by knowing how to fall. Instruction in falling is always given first. Unless the man who is thrown contrives to roll over and bounce to his feet like a rubber ball the struggle continues on the ground, with a variety of strangle-holds or limb-locks,

JUGGLERS AND ACROBATS
A 19th-century German coloured engraving

JU-JUTSU
A demonstration of the stomach throw at the Anglo-Japanese Judo club in London   *New York Times*

threatening dislocations and fractures. The wrestler tries to attack parts of the body such as the Adam's apple, the arm-pit, and the ankle; if these are pressed in a certain way, a temporary paralysis is caused.

Japanese wrestlers have frequently been able to beat western opponents, even when obeying the rules of ordinary wrestling. The western counterpart of ju-jutsu is 'unarmed combat', which forms part of a soldier's training; but this is simple compared with the elaborate Japanese method.

See also WRESTLING.

JUMPING, *see* ATHLETICS, FIELD EVENTS.

KEYBOARD INSTRUMENTS. 1. Many musical instruments are played by striking the keys of a keyboard. The keys are wooden, bone, or metal strips, arranged so that they can be controlled by the player, who may use his hands, as in the piano; his feet and hands, as in the ORGAN (q.v.); or his fists, as in the carillon (see BELL RINGING). The sound may be produced by hammers striking the strings or by wind being blown through the reeds and pipes. On the standard keyboard of the modern piano (*see*

diagram), 12 keys—5 black and 7 white—make up the octave; the number of octaves depends or the size of the piano and the number of sounding-notes. It is particularly in the development of the harpsichord family, the clavichord, and the pianoforte that the keyboard has played its most important part. These instruments are divided into two classes: with the clavichord and the pianoforte, the strings are 'struck'; with the harpsichord family, they are 'plucked'.

2. The HARPSICHORD FAMILY consists of the virginals, the spinet, and the harpsichord proper (*see* opposite page). They were the favourite domestic keyboard instruments from the 16th to the 18th centuries. In addition to their use in solo works, they were also used as the accompanying basis of combinations of instruments. A large amount of 16th and 17th century music, which is now played on the piano, was originally written for one of the harpsichord family or the clavichord. The early works of Mozart and Haydn were written for the harpsichord, although much of their later work was intended for the pianoforte.

In all three forms of the harpsichord the strings are laid horizontally. When the finger-keys are depressed, small pieces of wood, known as 'jacks', rise up. Attached to the jacks are quills, known as 'plectra', which pluck the strings as they pass them. When the jacks fall back, the plectra pass the strings without touching them.

The virginals are the earliest and simplest form of the harpsichord, and are little more than an oblong box across which strings are stretched, one string to each note. It was small enough to be placed on a table, although occasionally it was supported on a small frame. The origin of the name virginals is not known. It was so called before Queen Elizabeth played the instrument, so the name cannot be derived from the 'Virgin
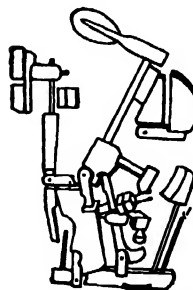
THE MECHANISM OF THE HAMMER OF THE MODERN PIANO, AND THE KEYBOARD, SHOWING ONE OCTAVE
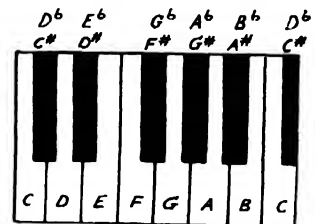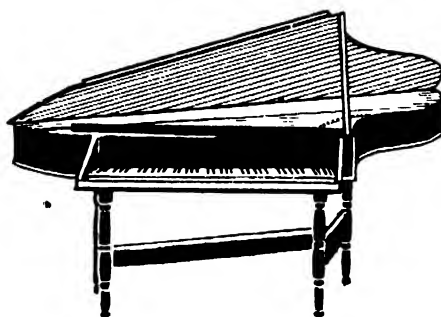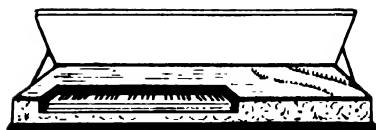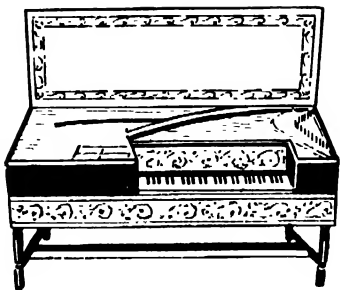
KEYBOARD INSTRUMENTS

On the top line are the virginals and the clavichord; on the middle line are the spinet and the harpsichord; and on the bottom line are the grand piano and the upright piano

Queen'. It was popular in the 16th and 17th centuries, but towards the end of the 17th century it was beginning to be superseded by the spinet and the larger harpsichord. The chief composers for the virginals were Gibbons, Byrd, and Farnaby.

. The spinet is similar to the virginals in having one string to a note. It is not, however, oblong in shape, but is rather like a horizontal harp fitted with a keyboard. Another name for the spinet was 'couched harp'. The spinet was in use from the later 17th century to the end of the 18th century.

The harpsichord proper, unlike the virginals and the spinet, has two or more strings to a note, and is a much larger instrument in the shape of a small, modern grand piano. There are often two or even three keyboards. Sometimes it is fitted with stops, like an organ, which can be used to make the quills strike one instead of two or more strings for each note. There is a revival of interest in harpsichord music to-day, and harpsichords are again being made.

3. The CLAVICHORD (see page 303) is not unlike the harpsichord family in general appearance. The strings, however, are not plucked by quills, but are vibrated by pressure-strokes from small pieces of metal called 'tangents'. Each tangent not only vibrates one string, but also 'stops' it, in much the same way that the fingers of the left hand of the violinist operate (see STRING INSTRU-MENTS). Thus each tangent divides the string into two lengths, one end being damped by a piece of felt while the other is free to vibrate. As the string is not plucked, the player has much greater control over the instrument through 'touch' of the keyboard, and in this respect the instrument is a much more sensitive one than the harpsichord.

4. PIANOFORTE. By the middle of the 18th century the pianoforte had begun to supersede the harpsichord family and the clavichord. Three types of pianos have been invented, the earliest type, the grand, being still the most popular to-day (see page 303). Several attempts were made to produce an instrument using hammers to vibrate the strings, but the first successful piano was made by an Italian, Cristo-fori, who, about 1709, invented a harpsichord on which he substituted hammers for quills. By applying greater or less force to the finger-keys, louder or softer tones could be produced. This piano was the ancestor of the modern grand

piano. A German called Silbermann (1683-1753) greatly improved upon Cristofori's piano. Later, about 1760, a pupil of Silbermann, called Zumpe, came to England and introduced the so-called 'square' piano, based in shape and size on the clavichord. The 'upright' or 'cottage' piano, in which the strings run perpendicularly, was perfected by Isaac Hawkins of Philadelphia in 1800 and Robert Wornum in England about 1829. The existing upright is largely based upon Wornum's piano. The frame of the modern piano has to be very strong—the strings of a large grand may have an aggregate pull of 30 tons: the introduction of a frame made of iron was largely due to American invention.

When the notes of the piano keyboard are depressed, hammers strike strings which are stretched across a harp-like frame. The hammers are so controlled that, when a key is depressed, the corresponding hammer remains away from the string after its initial striking. When the key is raised, the hammer falls back into position and so damps the vibrations of the string. The use of pedals was adopted from the harpsichord; normally, modern pianos have two pedals. The 'sustaining' pedal, when depressed, raises all the dampers from the strings and allows them to vibrate freely. The 'soft' pedal may either increase pressure on the damper action or move the hammer slightly, so that each one strikes a lesser number of strings, perhaps one or two instead of three. It should be noted here that each sounding note may have several strings tuned to the same pitch, so that while the sound produced by striking is a single-note effect, in point of fact several strings may have been set in vibration by the one hammer-stroke.

The piano and other keyboard instruments are not tuned according to the pure SCALES (q.v. Vol. XII), for this would mean using far more than twelve notes to the octave. In the pure scale the intervals between the notes vary very slightly, but in the piano a compromise between these variations is achieved so that the semitones are equal.

More music has been written for the piano than for any other instrument. Many works have been written for two pianos. The piano is not a regular instrument in the symphony orchestra, but is a brilliant solo instrument. Most of the great composers have written concertos for piano and orchestra.

See also MUSICAL INSTRUMENTS.

A LADY AT THE VIRGINALS

Oil-painting by Jan Vermeer (1632–1675)

KEW GARDENS, see Botanical Gardens.

KITES. These were certainly well known in China as long as 3,000 years ago. They have been used for many purposes besides amusement. Chinese historians tell of box kites large and strong enough to carry provisions to men trapped in inaccessible places in the hills, and on one occasion it is said that men were carried by kites over the wall of a besieged city. Man-carrying kites were used for observation purposes in the Boer War, and before the invention of balloons scientists used kites to make experiments into the nature and movement of the upper air. To-day Chinese farmers use kites for finding out the direction of the wind, from which they can foretell the coming of fine weather or rain.

The common diamond form of kite (Fig. 1) is very simple to make and operate. The usual method is to notch and glue two pieces of bamboo or other light cane into the shape of a cross. A piece of silk or linen is stretched over the frame, and the edges firmly sewn to resist the pressure of the wind and the consequent vibration of the fabric against the frame. A variation of the simple diamond form has a curved piece of bamboo or cane stretched round the upper part of the diamond to make the kite stronger and less liable to serious damage should it strike the ground sharply when coming to land. Most of these kites have tails to help balance them in flight, and the greater the head-weight the more heavily must the tail be weighted. Some kite-makers take the greatest of care calculating exactly what weight is needed on the tail to keep the kite on an even keel in flight and to prevent it diving. The box-kite is also very simple to construct. It is made in the shape of a hollow rectangular box, the centre and both ends being open (Fig. 2). The typical Chinese kite is
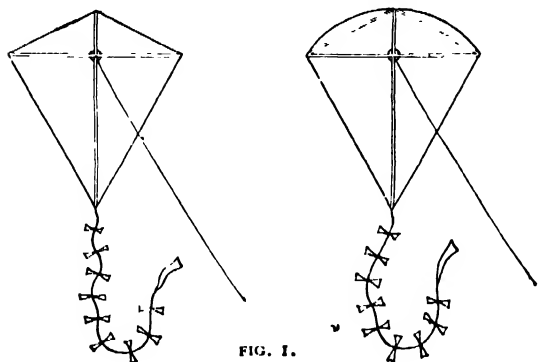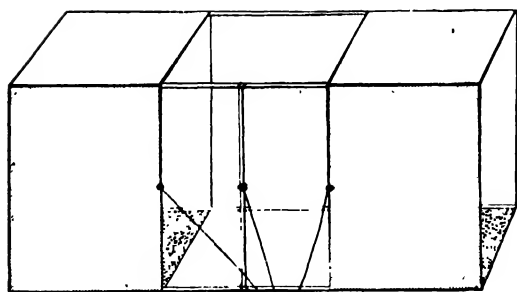

FIG. 2.

similar to the box kite, the bamboo frames are offset wind resistance and damage should the kite but the ends of slightly curved to prevent undue crash.

There are several methods of securing the flight-cords in all types of kite. To make a kite which will fly successfully much depends on the exactness of measurement and the accuracy with which the different stages of manufacture are carried out. While lightness is of great importance, the kite must also be strong, for, especially when flying high, it is subject to great wind pressure.

Kites should be released into the direction of the wind, that is, the person flying the kite should stand with the wind at his back. It is an advantage if the operator is standing on a height, for this not only ensures the best use of available air-lift, but it also gives the kite a better chance of avoiding the down-currents which frequently send it into a spin or a dive.

Kite flying and fighting are still popular pastimes in China. At festivals children fly kites shaped like dragons, strange human figures, gigantic birds, or fish. Kites in the form of carp and salmon have a special significance at boys' festivals, because boys are taught to emulate the character of those fish, which swim against the stream and overcome all difficulties. Kite fighting has been an entertainment for hundreds of years, and their victories are recorded in ancient Chinese stories. The cords of the kites are covered with glue and then rolled in powdered glass, crystal, or jade. When the kites are flying strongly, the competitors draw their strings as sharply as possible against each other's until one is broken, and the loser's kite drifts away.

KNUCKLEBONES, see Street Games.

FIG. 1.

L

LACROSSE. This was originally a Red Indian game called 'Baggataway', and was played by catching and throwing a ball with a net at the end of a stick. The early French missionaries in Canada called the game *La Crosse*, a French word for a crosier, because the stick was like a bishop's crosier. It seems that among the North American Indians all the men of one village played all the men of the next—so that there might be as many as 800 a side. There was plenty of running, for the goals might be half a mile apart, there were no side boundaries, and, to encourage their men, the squaws would beat them with sticks.

LACROSSE PLAYERS JUMPING FOR THE BALL.
A match between **London University** and **Bedford P.T. College** at Motspur Park, 1947. *Sport and General*

The Canadian settlers adopted lacrosse about 1850, and in 1867 the National Lacrosse Association was founded. They rightly altered the game as little as possible, so that it is still a very fast game in which there is no off-side rule, no boundaries except where lack of space makes boundaries necessary, and the referee's whistle is seldom used. The small netted goals (6 feet square at the opening) are from 90 to 110 yards apart. Sticks, or 'crosses', have become shorter with a larger net area than in the Red Indian game. The ball, about 5 ounces in weight, is made of solid sponge-rubber and is about the size of a tennis ball. There are only twelve players a side, and play is limited to two periods of 45 minutes (or in hot weather four periods of 20 minutes). It is chiefly a spring and autumn game in America, and a winter game in Britain. Players wear rubber-soled boots or shoes, and generally have gauntlet gloves padded on the knuckles—and men wear padded jockey caps. The field has no markings except for circles of 10 and 15 yards radius round the centre spot, and an area 18 feet long and 12 feet wide round the goal called the 'crease', from inside which no player may shoot.

At the start of play the teams do not, as in football or hockey, each occupy one half of the field; but, apart from the goal-keepers, they pair off, seven pairs in a long line between the goals and two pairs on each of the wings. When the game starts, the centres 'face' the ball in the centre of the field—that is, they place the ball on the centre spot and between the backs of their sticks. Then, when the whistle blows, each centre draws his stick sharply sideways and tries to make the ball fly out to the wings who are waiting on the edge of the circle. The aim of each side is to carry the ball by a series of sprints and passes close enough to the enemy's goal to be able to shoot, that is, to sling the ball from the cross into the goal net. Although in theory any player may shoot, only six players normally take a prominent part in the attack—the centre, 1st, 2nd and 3rd homes, and the two attack wings. The game moves very fast from one end of the field to the other, a powerful clearing throw from a defender often completely changing the centre of activity in a few seconds. Although the goal is very small, and the goal-keeper may use both hands and feet to stop the ball, it is usual for a number of goals—often as many as 20—to be scored in a game.

Good play depends on two things—good printing and the ability, on the run, to catch and throw the ball accurately from any position. In attack play the general aim is to sprint free of the opposing pair and to take a pass, and either dodge or pass again before being tackled. In defence the aim is to intercept a pass between two opponents, or to strike the ball out of the opponent's sticks, or at least to prevent his running round. The great speed at which all this is done and the swift changes of fortune, as well as the lack of complicated rules involving interruption from the referee, make lacrosse a very exciting game to watch. In good lacrosse the ball is 'airborne' almost all the time, and the players are running in a free, upright position. The few rules are concerned with preventing rough play, such as barging with the body or elbows. For this reason it has proved a very popular school, club, and university game for girls throughout the British Isles. Somewhat different rules have been adopted, and very high standards of international play are reached.

As a men's game lacrosse spread from Canada to amateur clubs and universities in the eastern states of the U.S.A., and to Australia. It has been popular in several parts of England since the beginning of this century, and is now played in a number of schools and universities. Oxford and Cambridge award a half-blue for those playing in the inter-varsity match. At the Olympic Games at Wembley in 1948 a crack American college team played an exhibition match with a representative English team, which resulted in a 5—5 draw. Many amateur clubs round Manchester and London play lacrosse. The English Lacrosse Union governs the game in Britain, runs inter-club league and knock-out competitions, and chooses representative northern and southern teams for an annual match for the Iroquois Cup.

LANCERS, *see* BALLROOM-DANCING.

LAWN TENNIS. This game is played by either one player ('singles') or two players ('doubles') a side. The purpose of the game is to hit a ball with a racket, either on the volley or before the second bounce, from one side of the court to the other, over a net 3½ feet high at the sides and 3 feet high in the centre. The court, which is marked out as shown in the diagram, may be either grass, wood, or 'hard'—that is to say, made of beaten

earth, ashes, burnt-brick dust, asphalt, or one of a variety of proprietary preparations. A wooden surface gives the fastest game, but it is used only in 'covered courts', and because of its high cost is uncommon. Grass courts, although faster than hard, are difficult to maintain, and are being more and more superseded by hard courts both in Britain, the home of the grass court, and over the rest of the world. There are no regulations governing the size of the racket (and some curious contraptions have been seen even on the Centre Court at Wimbledon); but in fact a
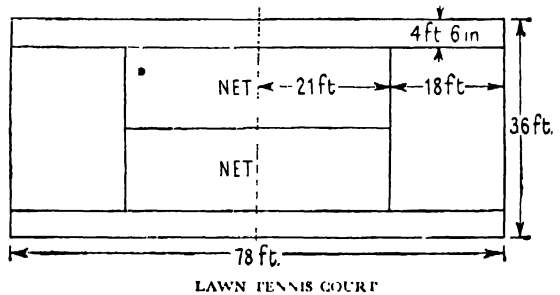
LAWN TENNIS COURT

standard form has evolved, about 2 ft. 2 ins. in length, weighing between 12 and 15 ounces, and with a wooden frame strung with gut. All-metal rackets have been tried, but have failed to win popular approval. The balls, 2½ inches in diameter and 2 ounces in weight, are made of rubber filled with compressed air and covered with white cloth.

Before play begins a racket is spun or a coin tossed, and the winner can choose either an end of the court or service. If he chooses an end, his opponent may, if he wishes, make him serve; but he rarely does, as the service is usually considered an advantage. As the players change ends after every odd game, including the first, it pays to choose to start with the end with most disadvantages, such as the sun in the eyes. Play starts with a service from behind the back-line of the right court, and the ball must land inside the opponent's right-hand service court, which measures 21 feet from the net. A first fault is allowed without penalty. The receiver of the service may not take it on the volley. The service for the second point is from left court to left court; and thereafter, services are from alternate courts, each game commencing from the right. The 'foot fault' rules in serving are important. The server may not run, walk, or hop in delivering the service, and at the moment of

swing both feet must be behind the back-line, one of them at least being on the ground. The rally ends when one of the players misses the ball, or hits it into the net or out of court. In singles the side-lines, which measure 4 ft. 6 ins., are not used.

Scoring is called in points like those of real TENNIS (q.v.), 'love', '15', '30', '40', and 'game'; '40-all' is called 'deuce', after which two points in succession must be scored for game, the first being called 'advantage'. A set is won by the first side to score 6 games or, if '5-all' has been reached, to get two games ahead. Men's matches usually consist of the best of five sets; women's, the best of three. Either side may score at any time, the server's score being called first, and the striker's second. A 'double-fault'—two successive failures to deliver a 'good' service— also loses a point, so does touching an opponent's ball ineffectually with racket or body before it has bounced, even though it would clearly have been 'out'. In serving, a ball touching the net-cord is called a 'let', and the server serves again; but in a rally, a net-cord ball is good, provided it drops in the opponent's court.

THE FRENCH TENNIS PLAYER JEAN BOROTRA PLAYING IN THE MIXED DOUBLES AT WIMBLEDON IN 1933. *Keystone*

In lawn tennis, as in almost every ball game, the golden rule is to keep the eye on the ball until it has been struck. The next essential is to keep the wrist below the head of the racket: this often requires bending from the waist and even getting the body very low indeed. 'Foot-work' is also very important. The player must not allow himself to become 'rooted to the spot' with the weight on the heels; the weight must be kept on the toes ready for instant movement—in fact, many first-class players almost dance on their toes the whole time the ball is in play. When actually making a shot the feet should be placed in such a way that a line drawn from one to the other (or through the shoulders) and extended across the net, would pass over the spot where the ball is intended to land. Thus, in playing a forehand stroke the left foot and shoulder should be well towards the net, and the right foot and shoulder well behind them. For a back-hand stroke the right foot and shoulder should be nearer the net. In playing a ball off the ground the aim should be to take it when it is still on the up-bound, using not too much wrist, rather more arm, and most of the shoulder and whole body. The great advantage of this 'taking an early ball', as it is often called, is that it gives the opponent much less time to gain or recover position.

In volleying, as well as keeping the head of the racket up it is essential that the wrist be kept quite stiff. The ball should not be hit hard from a swing, as when driving. The racket should be held firmly, and the striker's weight be allowed to give the ball most of its impetus. In this shot, too, the line of the shoulders and of the feet will determine the direction of the ball. In smashing overhead the secret is to get underneath the ball (if you were to miss it, it should fall on your left ear) and then hit it as though it were a service.

The foundation of the game is the 'drive'. In singles, particularly, the 'length' drive, which pitches as near as possible to the back line and is varied from side to side of the court, is the best way of manoeuvring the opponent out of position. The 'kill' is best made from a position near the net, both because it is easier to hit the ball down, and because the opponent has less time to recover position. In doubles, however, when all four players try to reach a position at the net, the drive should be directed at the opponent's feet as he runs up the court, to induce him to hit

LAWN TENNIS CHAMPIONSHIP AT WIMBLEDON, 1947
The semi-final of the women's doubles is being played on the centre court. Left are the U.S.A. players Mrs. P. C. Todd and Miss D. Hart, and on the right are Mrs. B. E. Hilton and Mrs. Bostock representing Great Britain.   *B.B.C.*

the ball up in the air so that it can be 'smashed'. For this shot the use of 'top spin', which makes the ball 'dip' in flight, is effective. On the other hand a 'cut' or sliced shot, which may be effective in singles, especially on a damp court, is useless in doubles, as the ball rises in the air, making it easy for the opponents to kill it. Defensive shots against net play are the low 'passing' shot out of the volleyer's reach, and the 'lob' which lifts the ball over his head.

Lawn Tennis originated in the game called 'Sphairistike' for which a Major Wingfield took out a patent in 1873. This was played on a grass court shaped like an hour-glass, with a plain rubber ball. The ball was struck with a racket which had a pear-shaped head, and had derived from that used in real TENNIS (q.v.). The game, which was given the name of Lawn Tennis, became popular at once, and within 2 years was introduced to the All England Croquet Club at Wimbledon. The first Wimbledon Championship was held in 1877, and was won by A. W. Gore. In 1879 a doubles championship was added, and in 1884 a women's championship, Miss M. Watson becoming the first lady champion. The game soon became popular also in America; the oldest national Lawn Tennis Association was the U.S.L.T.A., founded in 1881. In 1900 an American player called Dwight Davis presented the Davis Cup, which is competed for annually by many countries.

American and British women also compete annually for the Wightman cup, presented in 1923 by Mrs. Wightman. Supremacy in lawn tennis has fluctuated between countries, particularly Great Britain, France, Australia, and America. In 1907 Norman Brookes of Australia won the first overseas Wimbledon championship. 'Big Bill' Tilden, who won it in 1920, was the first American champion. From 1924 to 1930 three famous players of France (sometimes called the 'Three Musketeers'), Jean Borotra, René Lacoste, and Henri Cochet, were supreme in the game. In the 1930's F. J. Perry and H. W. Austin reasserted British supremacy; but recently the championships have been won mainly by Americans, such as Vines, Budge, and Riggs. Among the most famous of women players have been Mrs. Lambert Chambers, Suzanne Lenglen, and Mrs. Helen Wills Moody.

Only amateur players are allowed to play in the Davis Cup, and the Wimbledon and other national championships. Professional tournaments are also held, and professional players play exhibition matches. Many people think that the national championships should be open to both amateur and professional.

LEAP-FROG, *see* STREET GAMES.

LORD'S CRICKET GROUND, *see* CRICKET, M.C.C.
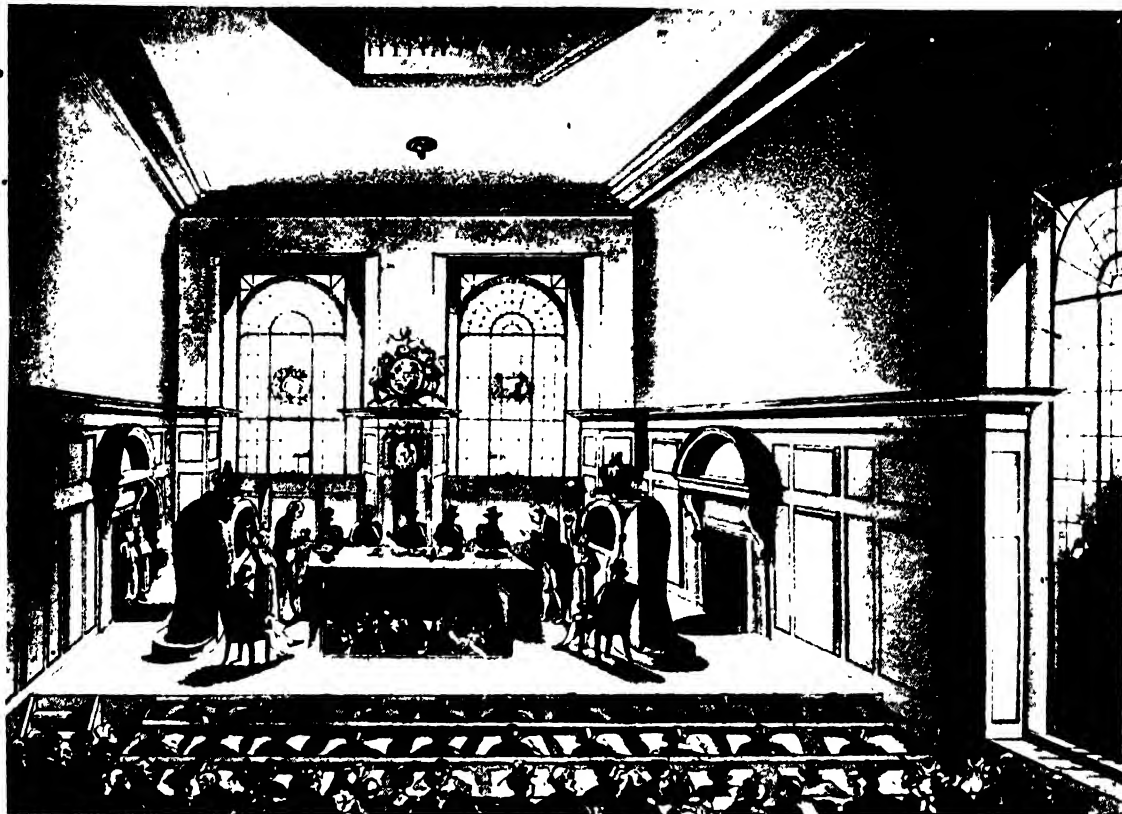
LOTTERY DRAWING IN COOPERS' HALL, LONDON
The lots are being drawn by schoolboys from Christ's Hospital. Aquatint by Pugin and Rowlandson
From R. Ackermann, *Microcosm of London*, 1809

LOTTERY. This is a distribution of prizes for which the winners are chosen by lot or chance rather than by skill.

In a lottery numbered tickets are sold, and on a given date duplicates of these are drawn at random from a box, the winning ticket being the first to be drawn. When an article is sold by selling tickets to any number of people and assigning the article by lot to one of them, this is called a 'raffle'. Some lotteries which are based on the results of horse or greyhound races are called 'sweepstakes'. In a sweepstake the drawing, which takes place some time before the race is run, is to allot horses to the numbered tickets, the first horse on the list of runners being allotted to the first ticket drawn, and so on. After the race has been run the first prize is paid to whoever has drawn the winning horse. The organizers of a lottery usually keep some percentage of the money realized

by the sale of tickets before paying the prize-winners.

The essence of a sweepstake is, as the name suggests, that the prize-winners 'sweep the stakes', that is, they collect the stakes, or a proportion of them, paid in by all the holders of tickets. Probably the best-known and largest lotteries in the world are the sweepstakes organized by the Irish Hospitals on the results of English horse-races, especially the DERBY and the GRAND NATIONAL Steeplechase (qq.v.). These 'Irish Sweeps' raised a yearly average of 5 million pounds before the Second World War. 25% of the money collected is distributed among Irish hospitals, and the remainder is shared out among the prize-winners, the chief of whom receive about £25,000 each. A very large proportion of the tickets are sold outside Ireland. The buying and selling of Irish Sweepstake tickets is illegal in both England and the United States.

311 • LUTES AND GUITARS

Many horse races, including all five Classic races (*see* HORSE RACING) are legal sweepstakes. The owner of each horse pays so much to enter his horse for the race and so much more if his horse actually runs. The owners of the first three horses in the race divide these stakes in proportions laid down beforehand. Usually the second and third receive 10% and 5% respectively of the whole stakes, and the winner receives the remainder. Often a sum of money, several thousand pounds in the case of the Derby or St. Leger Stakes, is added to the stake money by the racecourse authorities.

Lotteries have been used for a long time by governments and institutions such as hospitals to raise funds. Augustus, Nero, and other Roman emperors frequently used lotteries to raise money to pay for their big building projects and for general imperial expenses. Various authorities, the popes, for instance, used lotteries to raise funds during the Middle Ages. Queen Elizabeth introduced the first lottery in England in 1569 in order to raise money for her government. An Act of 1698, however, declared privately organized lotteries to be illegal in England, and the last public lottery licensed in England took place in 1823. The last state in the United States to license a public lottery was Louisiana, which held its last state lottery in 1893.

Various European states organized national lotteries from time to time as a means of raising revenue. The Italian National Lottery used, up to the Second World War, to make a yearly profit of about £100,000.

While public lotteries of any kind are illegal in Great Britain, lotteries or raffles organized privately to raise money for charity are legal if certain conditions are observed. Firstly, none of the prizes can be money prizes; secondly, all the tickets must be sold on the premises of the charity concerned—for instance, within the grounds where a bazaar is held— and the draw of the winning tickets must also take place on the premises; thirdly, no private person may profit from a lottery, and, apart from paying expenses such as printing, all profits must be paid over to the charity on whose behalf the lottery is organized.

See also GAMBLING.

LUTES AND GUITARS. In this article those stringed instruments are considered in which the sound is produced by plucking the strings with the fingers of the right hand, while the player holds the instrument and 'stops' the strings with the fingers of the left hand. The instruments may also be plucked with a 'plectrum'—a small piece of wood, metal, or ivory. Such instruments as the mandolin, the banjo, the Russian balalaika, and the ukelele are closely related to the lute and guitar family. Instruments in which the sound is produced by drawing a bow across the string are described in the article STRING INSTRUMENTS (q.v.).

1. THE LUTE (*see* Fig. 4) is primarily a solo instrument, although it is often used for accompanying solo songs. Its body is half-pear-shaped with a rounded back. The head is bent backwards. The finger-board is usually fretted, that is, marked off into sections, often by strips of catgut, to indicate the correct placing of the fingers. Each string is duplicated, and the number of strings has varied in different periods and countries. There is no bridge, as there is with the violin family: the vibrating length of the strings extends from the top of the finger-board to the bottom of the sounding-board.

There are many types of lutes, ranging from the small mandora to the bass theorbo and chittarone which, with its long neck, is about the same height as the player.

The lute is of unknown antiquity, but it is probably of Arabic origin. During the 16th, 17th, and 18th centuries it enjoyed great popularity in England, many songs of the time being written for lute accompaniment. Later it fell into disuse, though there is a revival of interest in the instrument to-day. The most famous of English lutanists was Dowland, a composer and performer of the Elizabethan period.

Music for the lute is written upon a special stave or tablature. Spaces indicate the strings, and letters in the spaces indicate the position of the fingers. The length of the note is indicated by marks resembling the tails of modern notes.

2. THE GUITAR (*see* Fig. 1) is a plucked instrument with curved sides and a fretted finger-board. Unlike the lute, it has a flat back, and usually has six strings. It is an extremely old instrument, its native home being Italy and Spain. It has recently been introduced into the modern DANCE BAND (q.v.) as part of the rhythm section. It is played by plucking the strings with the right hand and by stopping the strings with the fingers of the left hand to
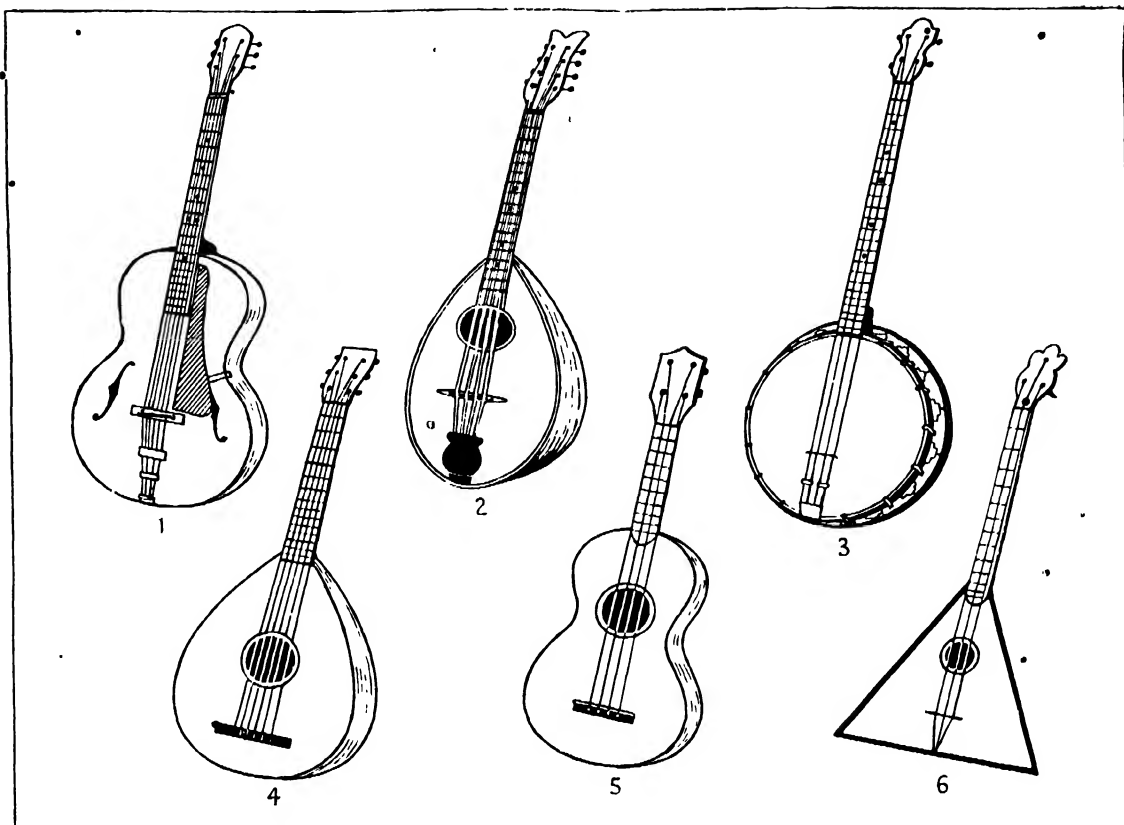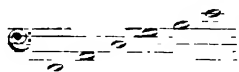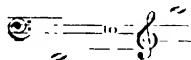
FIG. 1: GUITAR.   FIG. 2: MANDOLIN.   FIG. 3. BANJO.   FIG. 4: LUTE.   FIG. 5: UKULELE.   FIG. 6: BALALAIKA

vary the pitch, as with other stringed instruments. While it is suitable for light and soft accompaniments to the voice, it is also capable of extremely delicate solo work when handled by a skilled player.

The tuning of the instrument and its range are as follows:
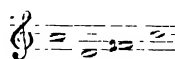

TUNING   RANGE

The so-called English guitar, or cithern, closely resembles a lute in shape, but has a flat back. It was frequently found in Shakespeare's time in the barbers' shops for the use of the waiting customer. It is wire stringed and played with a plectrum.
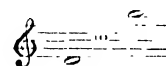
3. THE UKULELE (Hawaiian Guitar) a native instrument of the Pacific Isles, is played with the instrument resting on the knees. The ukulele has four strings and a long finger-board, with or without frets. The strings, which are made of steel, are stopped by means of a metal bar held in the left hand, and are plucked with a plectrum held in the right hand. This is the guitar which gives a wailing effect as the bar slides up and down the strings.

The instrument is tuned as follow.

TUNING   RANGE

It is essentially an accompanying instrument, but it can be made to sketch out a melodic line, although the result is inclined to be disjointed and unsatisfactory.

The modern ukulele (see Fig. 5) is a mass-produced instrument which became popular between 1920 and 1930, no doubt owing to the fact that it was an instrument which could be

easily learned, to accompany singers. It is still occasionally heard in the MUSIC HALL (q.v.). It has its own system of notation, which merely indicates the position of the fingers on the strings to be played. Rhythm is not employed in the notation, and the player keeps striking the strings as he pleases.

4. THE MANDOLIN has eight strings, tuned in pairs to the same notes as those of the violin. The instrument is tuned as follows:

TUNING   RANGE
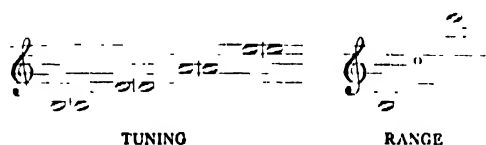
Screw pegs hold wire strings, which are stretched over a fretted finger-board and plucked with a small plectrum held in the right hand. The fingers of the left hand stop the strings and use the same method of fingering as the violin (*see* Fig. 2).

It has occasionally been used in the orchestra, but even then only for some special theatrical effect. It has a jingling quality of tone which does not easily blend with other instruments.

5. THE BANJO (*see* Fig. 3) is a member of the guitar family, but its sounding-chamber consists of a parchment stretched over a metal hoop. It has an open back. There are usually five or six strings. It has a low bridge, and has usually neither frets nor duplicate strings. One string, the melody string, is played with the thumb, while the others provide the accompaniment. The strings may be either gut (played with the fingers) or wire (played with a plectrum).

The banjo was probably of African origin, and was often played by the slaves in the plantations of the southern States of America. It is not used in the orchestra. The tenor banjo, which is frequently used in dance bands, has four strings tuned to the same notes as the violin, so that a player can switch easily from one instrument to the other. The zither banjo is a small banjo with wire strings.

6. THE BALALAIKA, which is about 2 feet long, is an instrument of Russian peasant origin, and is closely related to the lute family. Its sound-box is triangular in shape (*see* Fig. 6). It has recently come into popular favour in England through the theatre and the dance band. The instrument is made in various sizes, but the commonest form is that which has three strings tuned as follows:
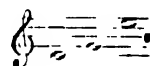
See also MUSICAL INSTRUMENTS, HISTORY OF.

M

MAH-JONGG was a popular card game in China 800 years ago. During the Sung Dynasty (A.D. 960–1279) the story of Sung Kiang and his 108 Revolutionaries was one of China's heroic legends, and the names of these heroes were given to the playing cards used in many games of the period. Gradually these merged into a single game of 108 cards, which became popular all over China. In Ningpo, the city of ivory carvers, pieces or 'tiles' were first used instead of cards, and these were made of ivory or bone backed with bamboo. Mah-Jongg was introduced into the Western world by an Englishman, who replaced the engraved names of the heroes with European letters and figures. The game was for a time very popular, especially in the U.S.A.

A full Mah-Jongg set has 144 tiles in six suits; but the game commonly played usually has 136 pieces and 5 suits. These suits are Bamboos, Circles, Characters, Honours, and Winds. Bamboos, Circles, and Characters are numbered one to nine, and there are four sets of each. There are twelve Honours—four Red Dragons, four green, and four white; and sixteen Winds—four East, four West, four North, and four South. The usual number of players is four, each taking

the name of one of the Winds. East Wind has certain privileges, such as choice of seats, an extra piece, first turn in the game, and the right to be paid double if he wins. Each player is East Wind in turn. The tiles are spread out face down and 'washed' or shuffled, in the same way as dominoes are shuffled. Then each player builds a wall, two pieces high and seventeen long, and the walls are pushed together into a square. A die is thrown to decide where the wall shall be broken, and then the players take their pieces, two at a time, working anti-clockwise. They play in turn, picking up a piece from the table and discarding from their hand, aiming all the time to fill their hands with four sets of three and a pair. The threes can be numerical runs in the same suit, or three of a kind. The first to fill his hand in this way is Mah Jongg, and is paid by the others in counters.

To get the best out of this fascinating game, a player has to think quickly and memorize well. There are endless variations in the hands, and forty-two rules to be remembered. One of the pleasures of Mah-Jongg is the handling of the tiles themselves, which are often beautifully made, with characters cut in fresh colours, and intricate little pictures of warriors, flowers, and strange beasts on the ivory.

MANDOLIN, *see* LUTES AND GUITARS.

MARATHON RACE. This race commemorates the running of the courier Pheidippides before the Athenian victory over the Persians in 491–490 B.C. at Marathon, a plain 22 miles from Athens in Greece. Carrying a request for help, Pheidippides covered the 150 miles between Athens and Sparta in 48 hours. There is also a legend that he took part in the battle and then ran back to Athens with the news of victory. The 1896 OLYMPIC GAMES (q.v.) first featured a race from Marathon to Athens in memory of Pheidippides and the Persian defeat, and it was won, appropriately, by a Greek peasant. The standard distance for the race, 26 miles 385 yds., is not the length of the course from the battlefield to the Stadium in Athens, but the distance covered at the London Olympics in 1908, when competitors ran from Windsor Park to the White City Stadium. The Marathon is a gruelling race, during which competitors may lose as much as 7 pounds in weight, and is suitable only for mature, experienced athletes. In Britain,
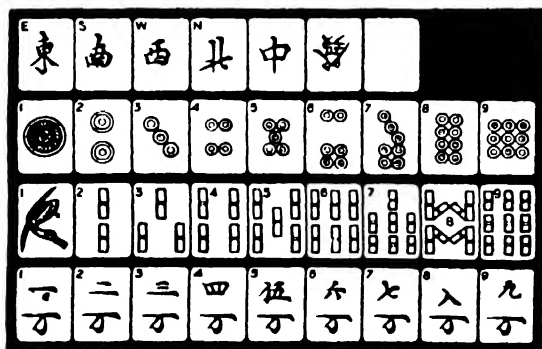
THE MAH-JONGG PIECES
In the top row are the four Winds, and the Red, Green, and White Dragons (the latter is a blank piece). The next row is the Circle or Cylinder suit and, underneath, the Bamboos and the Characters
From 'Mah Jongg'. Routledge, Kegan Paul Ltd.

A MARATHON RACE FROM WINDSOR TO THE POLYTECHNIC STADIUM, CHISWICK, IN 1947
The runners, members of the Polytechnic Harriers, are seen just after the start in the grounds of Windsor Castle
Sport and General

the two principal Marathon races are run over the standard distance — one from Windsor to the White City for the A.A.A. championship, the other from Windsor to Chiswick during the Polytechnic Kinnaird Cup meeting; but any course of 25 miles or over is often spoken of as a Marathon. The Olympic record for the race was established by K. Son of Japan in 1936 in 2 hr. 29 min. 19·2 secs.

See also ATHLETICS; CROSS-COUNTRY RACES.

MARBLES. This miniature form of BOWLS (q.v.), known in Egypt, played by the Roman Emperor Augustus, and popular in England during the Middle Ages, is one of the oldest of all games and was not originally confined to children. It was first played with nuts and round pebbles; but in the 18th century round balls made from chips of marble were introduced. Alabaster was used for some of the better marbles, which were known as 'alleys'. There are many forms of the game, all of them based on rolling or thumb-firing one marble to hit another. The most popular, and the simplest, is Boss-out or Hit-and-span, in which each player uses one marble and tries to win his opponent's by hitting it or coming within a hand-span's distance of it. Ring-taw, in which marbles are knocked out of a ring drawn on the ground, Pit, in which the object is to pitch them into a hole, and Bridge-Board, for which a piece of wood with numbered arches is used, are also quite common. Most other marble games are variations on these three. Marbles vary in kind and quality according to what they are made of and the way they are used in the games—the cheapest kind are 'com-

moneys', 'stoneys' and 'potteys', which shoot at the superior 'alleys', now usually made of coloured glass. The most prized of all is the 'blood alley', an alabaster marble streaked with red. The 'maradiddle', or home-baked clay marble, has died out; but often the names by which marbles are still known—'barios', 'poppos', 'taws' and so on—are several hundreds of years old. A kind of barter with marbles exists among schoolboys, the marbles being valued according to their kind—a stoney is held to be worth about three commoneys or two potteys, an alley is worth six commoneys or four potteys, while a blood alley may be valued at anything from twelve to fifty commoneys

MARIONETTES, *see* PUPPETS.

MARYLEBONE CRICKET CLUB, *see* CRICKET, M.C.C.

MASQUE. The masque was an aristocratic form of dramatic entertainment which grew out of court revelry. In the Middle Ages nobles and their ladies liked to while away the evening dancing in elaborate disguise against a background of rich scenery, varying the dance with songs and recited poetry. The performance usually had some central theme or story, generally allegorical. As time went on the performance became more formal, till under the Tudors, and still more under the Stuarts, the best poets, musicians, and designers of the day were employed to provide the material of which these rich spectacles were composed, though the performers were still the lords and ladies of the Court.

Of the poets, Thomas Campion, Thomas Carew, Ben JONSON (q.v. Vol. V), Sir William D'Avenant, and James Shirley were among the most famous writers of masques; Henry Lawes was a noted composer of music for masques; the most celebrated designer of stage sets and costumes was Inigo JONES (q.v. Vol. V). Poets and designers were not without professional jealousy: Ben Jonson complained bitterly, and with justice, that the work of Inigo Jones was valued far above his own in the masques in which they worked together. Most of the famous masques were staged at Whitehall under the Stuarts, but they took place also in the great country houses: Milton's *Comus*, for example, was given in the Great Hall of Ludlow Castle.

Masques had an important effect on the theatre because they introduced elaborate scenery, lighting, and costumes of a kind unknown in Shakespeare's time. The stage differed from that of the popular theatre of the day in having a proscenium arch, and wings of scenery dividing the main acting area and the inner stage. The designers learnt a great deal, especially the art of painting scenery in perspective, from the theatres of Italy. They were thus able to show their critical audience vast landscapes, seascapes, or interior scenes. They even had machines to make the trees or waves move, and trap-doors to give the actors spectacular and sudden entrances and exits. Large numbers of stage-hands were employed to set up and work this scenery, many more than in a modern theatre. At the same time stage lighting too was developed, because the masques took place indoors and not, as in the public theatres, in broad daylight in a building only partially roofed in. Special holders for candles were constructed, sometimes arranged in rows on 'battens', the term used for a board or long container for lights in the theatre to-day. These holders for the separate candles sometimes contained coloured liquids, or were screened with oiled paper to give a translucent effect. They could be set up, not only round the stage or in front of it, but behind the scenery.

It was, therefore, a very vivid if artificial spectacle which was revealed to a Stuart audience when the front curtain, often elaborately painted, was lowered to the ground at the opening of a masque. It was a form which did not last long,

THE MASQUE AT SIR HENRY UNTON'S WEDDING IN 1580
The masquers, led by Mercury and Diana, walk in pairs, with Cupids between them. Detail from a contemporary painting. *National Portrait Gallery*

THE MOUNTED BAND OF THE HOUSEHOLD CAVALRY AT THE TROOPING OF THE COLOUR CEREMONY. *Fox Photos*

because it was the expensive whim of an extravagant aristocracy, and so incurred the displeasure of the Puritans. But in its short life the contribution it made to the main streams of English theatrical development was a rich one.

See also THEATRE, HISTORY OF.

MASTIFF, *see* DOGS.

MAYPOLE, *see* FOLK DANCING, Section 2.

MENAGERIES, *see* CIRCUSES.

MILITARY BANDS. The history and development of military bands has always been closely associated with the armies of certain countries, especially Britain, France, and Germany. In this way it differs from that of BRASS BANDS (q.v.) which are primarily associated with civilian life, especially with the factories and collieries of industrial England. To-day the term is used for actual regimental bands and others with the same type of instruments.

In the 18th century Frederick the Great of Prussia did much to develop the military band by adding new instruments to it: his band included hautboys, clarinets, horns, bassoons, and drums. About this time, also, in England the Royal Regiment of Artillery used a similar combination. Later, Napoleon, who liked martial music, encouraged the formation of military bands in the French infantry regiments. In the middle of the 19th century the Belgian instrument maker, Sax, who invented the saxophone,

did a great deal to improve wind instruments and made possible the modern military band.

To-day nearly all regiments of the Army have their military bands; as have the R.A.F. Regiment, and Naval and Marine units. The regimental military band has many important duties: it plays during drill parades, it leads the regiment on ceremonial occasions, and it plays an important part at MILITARY TATTOOS (q.v.) and tournaments. Like brass bands, military bands give regular open-air concerts in the parks of cities and towns and by the seaside, and some of the well-known bands also broadcast concerts. Bandmasters and bandsmen can take courses at the Royal Military School of Music at Kneller Hall in Middlesex.

The military band is composed only of those instruments which can be played on the march. There are, therefore, no string instruments, such as violins and 'cellos, their parts being allotted to WOOD-WIND INSTRUMENTS (q.v.). The British Regimental band of about twenty-five players is normally composed from the following:

1 piccolo, 1 oboe, 12 to 14 clarinets, 2 bass clarinets, 2 bassoons, 4 horns, 2 small bass saxhorns, 2 euphoniums, 4 bombardons, 4 cornets, 2 trumpets, 3 trombones, 2 drums.

Some military units, and formations such as the BOYS' BRIGADE (q.v.), have bands consisting of pipes and drums or bugles and drums. When the band is playing on the march, the music scores are attached to the instruments themselves, but at concerts ordinary music-stands are used.

The repertoire of military bands consists chiefly of lively marches. The best-known composer of this kind of music was Sousa, who wrote over 100 marches, including the *Stars and Stripes* and the *Washington Post*. Elgar's *Pomp and Circumstance* marches, although scored originally for orchestra, are effectively arranged for military bands. Programmes at concerts are varied, selections from Gilbert and Sullivan operas and from musical comedies and operettas being particularly popular.

See also BRASS INSTRUMENTS; PERCUSSION INSTRUMENTS; WOOD-WIND INSTRUMENTS.

MILITARY TATTOOS. Tattoo is actually a signal played by drum and bugle in camps and barracks to warn troops that they must go to their quarters. The word itself comes from the Dutch *taptoe*: the signal originally announced the closing of the public houses or 'taps' in the days when troops were billeted in inns. After the First World War the Aldershot command gave the word 'tattoo' to a military spectacle presented every summer in an arena. The tattoo always took place between sunset and midnight, the pageant being illuminated by searchlights. Thousands of soldiers took part; and the events included cavalry rides, MILITARY BANDS (q.v.), military exercises, and a reconstruction of a famous historical event such as the battle of Waterloo, in which every detail of arms, uniform, and drill was correct. The success of the Aldershot tattoo led other commands to present tattoos on a smaller scale. Tattoos were discontinued at the outbreak of the Second World War.

See also TOURNAMENTS.

MIME. This is a form of dramatic art in which the actor expresses his thoughts and feelings and portrays a character by means of gesture, movement, and expression of the face and whole body, instead of by speech. It is the connecting link between DANCING and straight ACTING (qq.v.), and can be performed either as an art on its own, or in connexion with dancing, acting, or singing.

In mime certain conventional gestures with recognized meanings have grown up. Circling the face with the hand, for instance, means 'a lady'; placing both hands over the heart means 'love'; pointing to the third finger of the left hand means 'marry'. By using some of these traditional gestures, together with free movement and expression of the whole body, it is possible to convey meaning or to tell a whole story. To mime the nursery rhyme 'Little Miss Muffet', for example, the actor would introduce the story by making the gesture of 'a lady', and then show that she was little by indicating her height from the ground. At this point he would assume the character of little Miss Muffet and mime her sitting on a tuffet eating curds and whey out of a bowl. Then, becoming himself again, he would point to where the spider was approaching, and mime its movements as it sat down beside her. As the actor would now wish to represent Miss Muffet again, he would repeat the gesture of 'a lady', and then show her seeing the spider, expressing fear, and finally running away.

Early elements of mime are to be found in the traditional dramas of the East; but it is in the dances and dramas of ancient Greece that we find the foundation of mime as it is to-day: the Greek war-dances, for example, were imitations
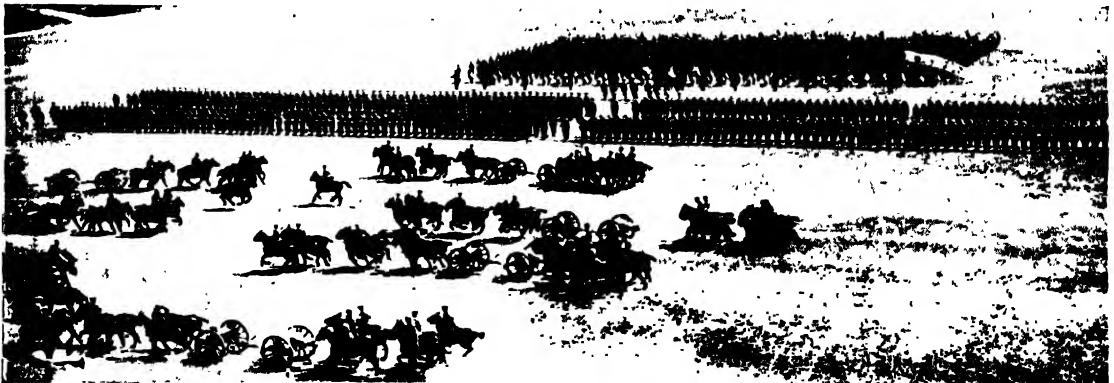
THE ROYAL ARTILLERY REHEARSING FOR THE ALDERSHOT TATTOO IN THE RUSHMOOR ARENA, JUNE 1934
Fox Photos

of the movements of attack and defence used in battle, and in the great Greek dramas the meaning of the words was underlined by means of movement and gesture. Mime was developed to a high degree of perfection in Roman times, and was probably brought to Britain by the Romans. In England, in the Middle Ages, it was practised by the strolling players, minstrels, jesters, and troubadours, many of whom acted in masks and performed impersonations of animals. It also found a place in the religious dramas, such as the MIRACLE plays (q.v. Vol. XII) of the 15th century.

In Italy in the late 15th and 16th centuries, mime played an important part in the performances of the Commedia dell' Arte—a popular type of comedy with improvised dialogue and stock characters, such as Harlequin, Columbine, and Pierrot (see HARLEQUINADE AND PANTOMIME). It is from them that we get the traditional gestures now used in classical ballet. The influence of the Commedia dell' Arte spread to France, and finally over most of Europe. By the 19th century the Harlequinade in France, having lost its dialogue and become merely dumbshow, survived mainly at fairs. About this time a young man named Jean Gaspard Deburau, who came from a poor and struggling family of acrobats, became famous in these mimes, which he brought to a much higher standard of perfection. His childhood was full of hardships, and it was probably these early sufferings that made his Pierrot so full of feeling and variety. It was said that he could move an audience to laughter or tears as he wished, and it is to him that we owe our present conception of Pierrot.

Generally speaking, mime has slowly declined in favour as a separate art since the beginning of this century, there being few exponents of it to-day. It has, however, been kept alive in England by a small group of experts. Recently the modern French theatre has produced a remarkable actor named Jean-Louis Barrault who is considered as great an exponent of the art of mime as any who have gone before him. He played the part of Deburau in a film of his life called *Les Enfants du Paradis*. This film came to England and has done much to revive people's interest in mime. It shows the young Deburau rising to fame at the little Théâtre des Funambules in Paris. It describes his love for a beautiful girl whom he rescues from being arrested for stealing a watch. He tells a crowd of people in

JEAN-LOUIS BARRAULT IN THE ROLE OF DEBURAU, THE GREAT FRENCH MIME, IN THE FILM 'LES ENFANTS DU PARADIS'
British Lion Film Distributors

mime, without any speech, how he saw the watch being stolen by a pickpocket, and he assumes the different characters, of the girl, the pickpocket, and the fat owner of the watch, leaving his audience in no doubt as to exactly what is happening.

Several different forms of mime can be seen in the modern theatre. In the plays of Thornton Wilder, which are acted with no properties and very little scenery, the actors perform 'occupational mime'—they go through the motions of actions, such as digging or playing tennis, without actually having a spade or a racket. In revue there are sometimes short items of mime, often as the interpretation of the words of a song, and even in a straight play an actor will often be obliged to express his thoughts and emotions without actually speaking, thus using a form of mime. The main place of mime in the modern

theatre, however, is in BALLET (q.v.). In classical ballet use is made of the traditional gestures, handed down by the Commedia dell' Arte, and in modern ballet a great deal of the story and feeling of the dancers is conveyed by mime rather than actual dance steps. In the ballet of *The Miracle of the Gorbals*, for example, in which a young girl kills herself and is restored to life by a miracle, although there is plenty of dancing, the story is conveyed almost entirely by mime.

MINSTRELS. The word 'minstrel', which is Old French in origin, was used in the Middle Ages to mean a professional musician or singer—often one whose special accomplishment was the composing and singing of heroic lays and ballads. Sometimes the minstrels were wanderers, but many were permanently attached to royal or noble households. Every nobleman had several minstrels in his company, who would play to him at meal-times and other leisure moments. A minstrel's gallery was often built overlooking the great hall.

The minstrel existed long before the word was actually used. His counterpart was to be found in the 'joculator' or wandering entertainer of ancient Rome; and equivalents to him existed in all parts of Europe. In Saxon England these were known as 'gleemen', and later by their French name of 'jongleurs'—from which has come our word JUGGLERS (q.v.). At every Anglo-Saxon court there was the 'scop'—a poet and singer who wove into poetry any heroic deeds he heard of. By the 14th century the term 'jongleur' had come to be used mainly of the lower-grade entertainer, while the more highly-skilled singers and instrumentalists were called 'minstrels'.

The minstrels themselves varied, naturally, in quality—the wayfarers were often less accomplished and more disreputable than those who lived permanently in a nobleman's house. Both kinds, however, played a very important part in the social life of the day. The wandering minstrel was equally welcome in castles and mansions or amongst the poor in their taverns, it being mainly through him that the news travelled from place to place. Each new item that he gathered would be woven into a ballad and sung in the next place he visited. Great political events would give rise to many ballads—probably more picturesque than accurate—which would travel round the country, passed on by word of mouth.

The minstrel who belonged to a noble household was frequently an accomplished singer and musician and was often a privileged companion of his lord. William the Conqueror's bard, Taillefer, for instance, was granted the privilege of striking the first blow at the Battle of Hastings, and advanced tossing his sword in the air—a favourite jongleur's trick—and singing songs of Charlemagne and Roland. The most famous minstrel of all is perhaps BLONDEL (q.v. Vol. V), the loyal follower of Richard I, whom he rescued from prison.

Towards the end of the 11th century the troubadours (*see* SONG, HISTORY OF, Vol. XII), who originated in Provence, became prominent. These were poets and composers

MINSTRELS IN THE 14TH CENTURY
Marginal drawing from the *Romance of Alexander* (c. 1340).   Bodl. MS. 264

rather than minstrels generally noblemen, sometimes even kings, who composed songs dealing with the particular ideals of chivalry. The troubadour was often accompanied by a minstrel who either played an instrument to his master's singing, or himself sang the songs his master composed. The word 'minstrel', derived from a Latin word meaning a servant, is thought by some to refer to this duty.

Occasionally, the ballads which the minstrels composed were poems of a very high order, and were sometimes sung to folk-tunes still familiar to us (*see* BALLADS, Vol. XII). The minstrels played on all kinds of instruments—string instruments, such as the harp, lute, and guitar or zither, the lyre, the hurdy-gurdy, the trumpet, bagpipe, and mouth organ, and also a kind of portable organ, blown with one hand and played with the other. Minstrels often combined other gifts with their musical talent, and some court JESTERS (q.v.) were, like Feste in *Twelfth Night*, proficient also as minstrels.

It was when the minstrel's profession became organized that the professional musician as we know him to-day began to grow up. The organization of such professions grew out of the GUILD SYSTEM (q.v. Vol. VII) from the 15th century onwards. As a casual profession minstrelsy had fallen into disrepute by the 16th century. The wandering musicians associated with other less respectable performers, and their own songs became often both bawdy and seditious. During Elizabeth's reign Acts were passed which classified minstrels with common rogues and vagabonds, and made it illegal for them to perform without special licence. The really skilled minstrel had almost disappeared from the streets even before these Acts were passed, and by the late 15th century the word 'minstrel' applied princip ally to the professional instrumentalists who often performed in groups. Street entertainers persisted, and ballads continued to be composed even as late as the 19th century.

See also STREET ENTERTAINERS; JESTERS; JUGGLERS.

MINUET, *see* BALLROOM-DANCING.

MODEL AIRCRAFT. The first model aircraft, powered with rubber bands, was flown in 1870 by a Frenchman named Penaud. Now there are nearly a million aeromodellers, in Great Britain alone, and some 500 aeromodelling clubs apart

A MEMBER OF THE BLACKHEATH MODEL FLYING CLUB HAND-LAUNCHING A RUBBER-DRIVEN MODEL. *Paul Popper*

from the Air Training Reserve, Air Scouts, and Air Rangers. In Britain there is even a special aerodrome for aeromodellers only.

There are three kinds of model aircraft: small ones driven by twisted rubber bands, gliders or sail planes, and motor-driven planes. They vary in size from 12 inches to 14 feet, and in weight from 2 ounces to several pounds. The general building method is the same, though some are made entirely of wood and some have a paper-covered wooden frame. The wood used is usually balsa, a very light Central American wood. The framework of the body, wings, and tail plane is first built up with balsa strips and then a wire or bamboo undercarriage with small wheels is made. The framework is covered with tissue paper which is sprayed with dope to tighten and strengthen it, and make it airtight.

In rubber-driven models the wire holding the propeller is bent to a hook and holds one end of the rubber motor, the other end being fixed near the tail. To fly the model, the rubber band is twisted and then released like a spring to drive the propeller. Gliders are thrown into the air or launched on a line like a kite and, if rising up-currents of air are present, they will remain

aloft for anything up to an hour. Sometimes devices have to be fitted to prevent models flying too far and getting lost. Power driven models usually have tiny two-stroke petrol or diesel engines. Experienced modellers also build and. fly scale-models of full-size machines, and even rocket and jet-propelled models.

One of the chief interests of aeromodellers is in racing their craft. Model-aircraft racing is organized by the Society of Model Aeronautical Engineers (S.M.A.E.), which is authorized by the Royal Aero Club to organize clubs and arrange contests. Competitions are arranged for the three different classes of model, and clubs compete for national trophies. The best-known model aircraft event is the two-day British National contest held at Whitsun each year, in aerodromes selected to give each part of the country a turn in due course. There are also international competitions; the Wakefield Cup for rubber-powered models, which attracts entries from all over the world, normally takes place each year in the country holding the trophy. The magazine, *The Aeromodeller*, deals with every aspect of the sport, and also reports the latest tendencies in design.

Some aeromodellers build only solid or non-flying scale models of the most accurate detail and finish. They may be as small as 6 inches from wingtip to wingtip, and yet reproduce in miniature the details of well-known types of civil or military aircraft.

See also Vol. IV: AEROPLANE.

MODEL RAILWAYS. The first steam locomotive ever made in England was a model. It was built in 1785 by William Murdock of Redruth, Cornwall, the inventor of gas lighting. The toy railway is supposed to have originated in France as a simple locomotive driven by clockwork with a few tin coaches and a circular track. The Germans later developed the idea further, and now the building and working of model railways is a hobby that attracts thousands of people of all ages.

The early toy locomotive was a stubby engine, often painted green, with brass wheels and a tall chimney. Although flanges were fitted, the engines never ran on a track satisfactorily. There are now a great variety of gauges (the distance between the rails), and a system of points can be fixed so that toy trains can run over quite elaborate lengths of track. Besides the 'toy' railway, keen amateur engineers have made working scale models with locomotive, rolling-stock, and equipment, some of which are large enough to carry passengers.

Toy or model engines are propelled by clock-
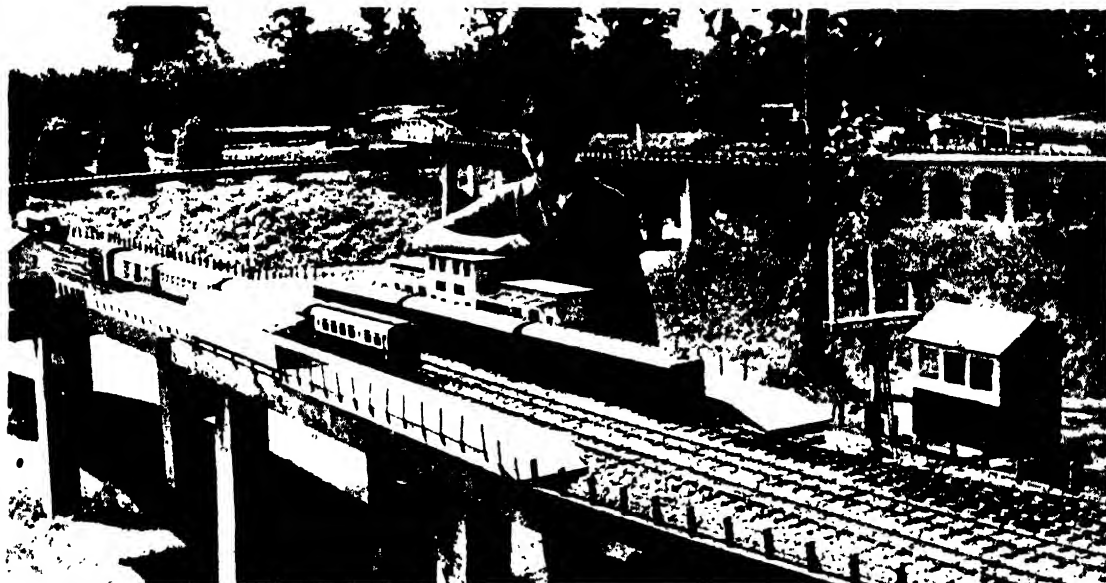
AN OUTDOOR MODEL RAILWAY
This Gauge 1 garden railway has clockwork, electric, and steam locomotives operating on the same track
Bassett-Lowke Ltd.

work, steam, or electricity. Engines driven by clockwork can be run indoors or outdoors and are the cheapest type available. They can be stopped, started, and reversed without being touched by hand, and governors prevent them from leaving the track when fully wound.

The steam-driven model locomotive is the oldest kind, but is still popular. The preparation of the lamp, or lighting of the fire, the oiling, and the final response of the engine when steam is up and the regulator is opened is so like the firing of a real engine that it always makes a great appeal. Used with common sense and care, a model steam locomotive can be both clean and safe to work.

The third and most recent method of propulsion is electric power—probably the most popular of the three methods because it is so easy to operate. When reproducing a steam engine, the motor is hidden away in the boiler body. There is no winding of clockwork, no need to raise steam, and the operator can sit at the controls operating different switches, while the train, or trains, are stopped, started, reversed, and marshalled by shunting. As electric locomotives are little used on the railways of Britain, the outline of a steam engine is generally chosen; but on the Continent, where electric locomotives are more used, that type of model is more popular.

A very complete choice of locomotives, rolling-stock, track, signals, and all accessories, is now available, and the amateur can buy sets of parts from which he can build models himself. Of the various types of track, the inexpensive tinplate rail may not look very attractive, but is suitable for a simple portable railway which can be packed away after use. The most enthusiastic model railway builders, however, use a scale-model permanent way made of steel or brass, with proper chairs and sleepers, and this, except in the matter of size, is exactly like a real permanent way. If the railway is to be electrically operated, either a centre rail is added to collect the current, or a 'two-rail' system is used. With the latter all the wheels must be insulated. Direct current from an accumulator or through a rectifier from the mains is preferable. Alternating current through a transformer to the mains is sometimes used, but this method is not so good nor so easy for distant control.

The most popular size of model railway is Gauge o (1¼ in.). But in 1920 a much smaller size, Gauge oo (166 mm.) was introduced, and

this is particularly suitable for a large lay-out in a small space. This small size is not satisfactory for clockwork and steam but works perfectly with electricity, and the miniature size of the whole equipment has a special fascination.

The largest and best-known passenger-carrying model railway is the New Romney, Dymchurch, and Hythe Railway on the Kent coast. This is operated on a 15-in. gauge. Model railways on gauges ranging from 2¼ in. to the passenger-carrying sizes of 7¼ in., 9¼ in., and even the 15 in.-gauge are built by amateurs.

There are several publications, mostly monthly magazines, which are entirely devoted to model railway building and operating, and there are many clubs and societies of people interested in the subject. Various exhibitions are held, the largest of which, arranged by the publishers of the *Model Engineer*, plays a very important part in the development of the hobby.

See also Vol. IV, MINIATURE RAILWAYS.

MODEL SHIPS. No one knows who made the first model ships, but examples have been found in Ancient Egyptian tombs dating from about 2500 B.C. These were not toys, but tokens of the ships which the Egyptians believed the dead man would need in his future life. Shipbuilders have for centuries made models as designs or as records of ships; indeed, contracts for new vessels often contain a clause stating that a ship model should be provided with the ship. Elaborate and very beautiful models of fully-rigged sailing ships, both merchantmen and men-of-war, are to be seen in the National Maritime Museum, Greenwich, and in the Science Museum, South Kensington.

Sailors on long voyages in the days of sail used to amuse themselves by making models of their ships, the models which have survived best being the fully-rigged ships set inside bottles, for the bottle protects the delicate masts and tiny sails and rigging. The model ship in a bottle has always been popular, partly because of the mystery as to how the fully-rigged ship got through the bottle's neck. Actually the hull of the ship is made small enough to pass through the neck, and the masts, sails, and rigging are laid flat on the deck, until the hull is in place. Then the masts are pulled upright and the sails made taut with long pincers, or by pulling little strings or wires, fastened to the masts. In some models the bottle was first half-filled with wax,
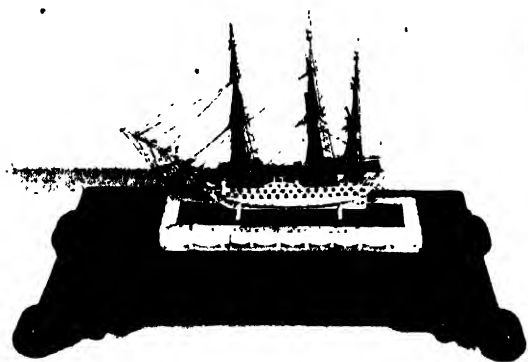
coloured blue to look like sea. There are a few model ships in bottles dating back to the 17th century, but most belong to the 18th and early 19th centuries.

Models of ships, mostly ships of war, made by the French prisoners during the Napoleonic Wars, can be seen at the Peterborough Museum, for there was a large prison camp near that town. The prisoners carved ships and other models out of bones from the camp kitchen, and sold them for money to buy comforts.

Building waterline models is still a popular hobby. Drawings and sets of parts can be bought for making well-known types; for more elaborate sailing ships the model-builder usually copies a picture, perhaps an old print, and he needs a considerable knowledge of the different methods of rigging These are all non-working models which do not float, but they show accurately the form and upper structure of the vessel.

A popular type of working-model ship is the motor boat, driven by clockwork, by an electric motor run off an accumulator in the hull of the boat, or even by a steam engine. Sets of finished parts can be bought for making these, and some, though only a few inches long, are complete with a clockwork motor.

Perhaps the most popular is the inexpensive model sailing yacht, which many amateurs can build for themselves. The racing of model yachts is a well-organized sport in Britain. There are model yacht racing clubs all over the country, most of which are affiliated to the Model Yacht Racing Association, or to the model Power Boat Association. There is a regular programme of competitions and invitation events

organized much like those between full-scale boats, with races for the various classes. An international model power boat regatta is held in Victoria Park, London, and a similar meeting for sailing boats on the Round Pond in Kensington Gardens. These events attract entries from all parts of the world. In the sailing races a course is marked out, and at each tack the boat is redirected from the bank. Sails are not reset until the race is over. It is possible to set the helm of a motor boat with more accuracy, and so there are a number of events for this kind of model. There is a nomination event, when each entrant estimates the time his boat will take over the course. The nearest estimate, whatever the speed, wins the race. There is a steering competition in which the boats are aimed to pass between fixed buoys. For the really fast boats there is a speed test round a circular course. The boat is fastened by a line to a post in the centre of the pond, and electrical timing gear is fitted to the post. The boats are tested separately, the winner being the one that returns the best time for a fixed number of laps.

It is difficult to say where the model ends and the real ship begins. In the Imperial Services Exhibition of 1913 at Earl's Court, London, a fleet of model warships was built to take part in a naval pageant and battle. They were electrically operated, and were so designed that in the larger models two men could sit in the hull, one to operate the movements of the ship and the other to work the guns and signalling.

See also MODEL AIRCRAFT; MODEL RAILWAYS.
See also Vol. IV: SHIP.

**MORRIS DANCE,** *see* FOLK DANCING, BRITISH.

MOTOR BOATS. It is not necessary to buy a special racing craft to enjoy motor-boating either on sea or on inland waters; an inexpensive outboard engine may be attached to any hull, about 10 feet for an open craft and up to 25 feet for a small cabin-cruiser hull. Motor-boat racing is carried out either with an outboard engine or with a motor cruiser with an inboard engine attached. In the sailing world the outboard engine is comparable with small craft such as the 'Merlins', and the inboard engines with the larger 'Dragons' and ocean cruisers.

Outboard racing is confined to various classes according to the cubic capacity of the engine, ranging from the 'J' class with a capacity up to

175 c.c., followed by the 'A' class up to 250 c.c., the 'B' class up to 350 c.c., the 'C' class up to 500 c.c., and the 'X' class up to 1,000 c.c.—boats in the 'X' class are allowed superchargers. There is no restriction in the hulls for hydroplanes, which are usually 'stepped' boats, designed to travel over the surface of the water instead of through it. Contact between hull and water is broken up by the flat bottom of the hull, which has a break or 'step' usually just abaft amidships.

When outboard engines are used on dinghies there is a restriction on the hull. In both classes the complete outfits are eligible to attack world and national records, whether speed records over the mile, kilometer distance records of 12 miles, or hour records, which range from one to six hours. The range of the engine classes is divided into 'racing' or 'utility' engines, but no division is made in these classes for record attempts or for racing. In all there are thirty-five outboard world records recognized for the various classes of outboards.

The recognized international and national classes for racing craft propelled by inboard engines are classified by weight, that is to say, up to 450 kilos, up to 800 kilos, up to 1,200 kilos, and unlimited, in which there is no
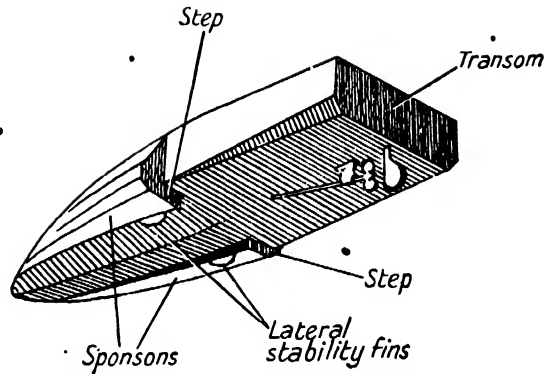
A RACING MOTOR-BOAT OF THE 3-POINT SUSPENSION TYPE

restriction on the form of hull or the power of the engine, provided the maximum weights are not exceeded. Here again these ultra racing hulls are usually of the 'stepped' or 3-point suspension type. The latter was introduced only a few years before the Second World War, and consists of two 'sponsons' or projections on either side of the main hull, which tend to lift the hull from the water and enable it to ride at speed on three points—the sponsons and the tail or transom. The main underwater body is practically clear of the water. The other inboard classes

RACE BY OUTBOARD AND RUNABOUT MOTOR-BOATS ON THE SEINE, PARIS, AT A MEETING OF THE YACHT MOTOR-CLUB OF FRANCE, 1948. *Keystone*

are covered by the American Power Boat Association's classifications of 'runabouts', which cover three classes of service runabouts, and two classes of racing runabouts according to engine capacity and hull length; but these have no 'steps' or breaks in their bottoms, and are usually of the hard chine or V-bottom type. The 'Hydro Glisseur' classes are also restricted by weight, and cater for hulls propelled by engines driving aerial propellers; but these have not proved very popular except in Italy and France.

Other inboard classes recognized are craft propelled with diesel engines, the 4-litre and 91 cubic-inch class, and jet-propelled craft. All the inboard and 'Hydro Glisseur' classes are again eligible to attack world and national speed distance records of twenty-four miles or records up to twelve hours, and since 1946 all classes can establish five-mile competition or racing records —the fastest time over a distance of five miles in competition. In all, the inboard, 'Hydro Glisseur', diesel, and jet classes cover another eighty-eight records, so that more than 124 world records are recognized by the Union of International Motorboating.

Rules and regulations for international and national control of motor-boat racing are controlled by the Union of International Motorboating with its headquarters at Brussels, which meets once a year. This organization controls the motorboating all over the world. Twenty-two nations are affiliated to this body, and they are represented by delegates appointed by their national authorities, who control the sport in their various countries and implement the rules and regulations of the U.I.M. The President of the Union is supported by three vice-presidents and a secretary.

In 1937 the 'Pavillon D'Or' International Cruises were originated, the first cruise being run to Paris. The actual trophy, 'the gold burgee', is awarded each year to the vessel which makes the longest sea or inland water passage in a direct line to the scheduled port of arrival. There are also supplementary awards for the best-kept log, the most handsome vessel, the best laid-out engine-room, and so on. The events are judged by a committee appointed by the national authority of the country which is authorized to organize the event. These cruises were revived in 1947, when the port of arrival was in Belgium.

All the affiliated motor-boat clubs in England

organize racing regattas, providing facilities for different kind of craft at the various meeting places. Inter-club racing is also encouraged, and during the winter clubs arrange lectures on racing, design, and navigation, to encourage beginners to take an interest in their craft and in their maintenance.

See also REGATTAS, SAILING.

MOTOR-CAR RACING. The first motor-car races took place before the beginning of the 20th century. France, a pioneer in the production of cars, started a competition between Paris and Rouen in 1894, and followed this in 1896 with a race from Paris to Marseilles. The winner was Mayade, whose 4-h.p. Panhard covered the 1,077 miles at an average speed of 15·9 miles per hour. From that time onwards France staged more and more great races over her Routes Nationales. The Paris to Berlin race of 1901 was won by Fournier's 60-h.p. Mors at 44·4 miles per hour for the 691¼ miles; and the Paris to Vienna in 1902 by Marcel Renault in his 16-h.p. Renault at an average of 39·2 miles per hour for approximately the same distance.

These long-distance contests were very strenuous tests of men and machines. They came to an end in 1903, when, in the race from Paris to Madrid, there were so many serious accidents that the authorities stopped all competitors at Bordeaux. These accidents put an end to racing between towns over unguarded public roads. In future racing was confined to circuits of roads properly closed for the purpose by officials and police. Such a race had been run in 1902 over the Circuit des Ardennes in Belgium, being won by the Englishman, Jarrott, in a 70-h.p. Panhard, at 54·3 miles per hour.

The early town-to-town races were contested by anyone who cared to enter, French drivers predominating. A trophy was presented by Mr. Gordon Bennett to the winner of an annual race, for which teams of three cars were accepted from each country. One of the rules was that the winning country should organize the next year's race. France won the first two Gordon Bennett races; and in 1902 S. F. Edge, in his British 40-h.p. Napier, was victorious, at 36·1 miles per hour, from Paris to Innsbruck. Great Britain organized the race in Ireland in 1903, which Jenatzy in a German Mercedes won; the 1904 race was won at Hamburg by a French Richard-Brasier car, and so the 1905 race went back to
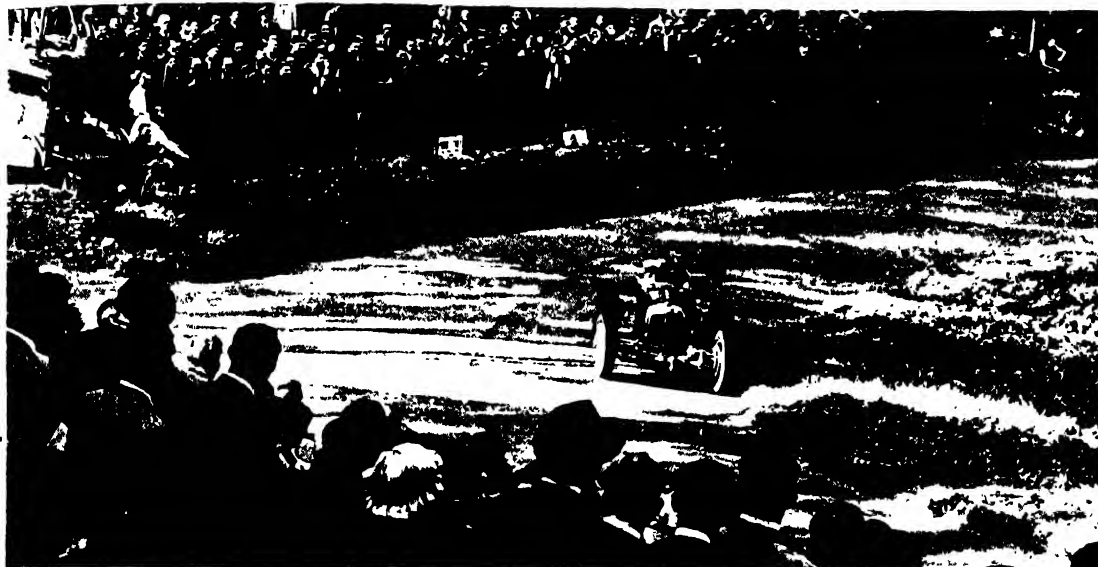
A 2-LITRE E.R.A. B-TYPE RACING MACHINE AT SHELSLEY WALSH HILL CLIMB IN 1949. *By courtesy of 'The Motor'*

France, where a 96-h.p. Richard-Brasier proved victorious.

In the Gordon Bennett Races only a very limited number of cars could compete. The Automobile Club of France decided, therefore, to replace this with a Grand Prix, a road race held annually at any convenient circuit and open to anyone, the rules being agreed by an international committee. Other countries were quick to hold similar races, and Italy, Belgium, Spain, Britain, and Germany all staged Grand Prix road races, usually of 300–500 miles, under varying rules and conditions. However, the French race became the premier motor race of the year, although cars built specially for it were able to run in other countries' races—all the bigger Grands Prix having much in common.

The first French Grand Prix, which was held at Le Mans, occupied two days and was won by a French Renault, at 63 m.p.h. Up to this time racing cars had been getting more and more powerful, each year bearing less resemblance to the ordinary car. It was decided therefore, that cars competing in the French race should conform to specific rules, which were varied year by year. By permitting only a certain allowance of fuel, or by imposing a limit on weight, or by not sanctioning engines above a certain size, some equality was maintained between competing cars, and entirely new designs were necessary each year. These races became battles between different manufacturers, instead of between nations, the winning makes up to the First World War being Renault, Fiat, Mercedes, and Peugeot. In 1923, after the war, Segrave's British Sunbeam was victorious, averaging 75·3 miles per hour at the Tours circuit.

Apart from the French and other Grands Prix races, there have been other great races of a different character. One of the most important of these, begun in 1910, used to be the Targa Florio, held over a mountain course in Sicily. The roads, which climbed up into the hills, were mostly of very poor surface, and had frequent unprotected drops down into the valleys far beneath. The Italian Mille Miglia, or 1,000 mile race, for sports-type cars, starts from Brescia, and is the only race since 1903 to be run over unclosed public roads, though these were patrolled to some extent while the cars went through. The 1938 race, the last to be run over this ambitious route, was won by an Alfa-Romeo at an average speed, including stops, of 84·45 m.p.h.

Another important event, in which British cars performed with credit, was the 24-hour sports car race at Le Mans in France. The cars each had two drivers, who took turns at the wheel throughout the day and night. This great race was won by Britain on five occasions with Bentleys, and in 1935, at 77·8 miles per hour with a Lagonda.

In England racing on roads is not allowed, as

the roads are too congested to make it practical. In early days the Isle of Man was the centre for both motor-car and motor-cycle Tourist Trophy races (see MOTOR-CYCLE RACING); and later motor-car T.T. races were revived in Northern Ireland, where they now take place. But in England racing has been confined to the track at BROOKLANDS (q.v.) and later to the circuits at Donington Park and the Crystal Palace. Now Brooklands has been replaced by the course at Silverstone, where Grand Prix racing has been successfully restored, and at Goodwood, where the Bank Holiday meetings, which used to be held at Brooklands, are now staged.

See also Vol. IV, MOTOR CAR, HISTORY OF.

MOTOR-CYCLE RACING. At the beginning of the 20th century the first primitive motor-cycles appeared in Paris and London as pacing machines for pedal cyclists in track racing, their legal speed limit on public roads being 12 m.p.h. But, as the popularity of motor-cycling increased, motor-cyclists began to clamour for opportunities of higher speeds. Existing tracks, constructed for running or cycling, were too small and insufficiently banked on the bends, and the British Government refused to follow the example of continental Governments by closing sections of roads for racing. For a few years motor-cyclists had to be content with timed HILL CLIMBS (q.v.), where the gradient prevented machines from exceeding the speed limit. Meanwhile, in Germany, France, and Austria, races were being organized over public roads, closed and policed for the purpose. Eventually the Isle of Man Parliament ('House of Keys') authorized the use of a short road circuit for the training and selection of British riders to represent their country on the Continent in the International Cup. But with such limited facilities they were not able to achieve much.

In 1907, however, the Auto-Cycle Club organized the first Manx Tourist Trophy or 'T.T.' races. There were no prescribed engine-sizes, awards being simply offered for the best single and multi-cylinder types. Each rider was given a fixed allowance of petrol; and pedalling as with ordinary cycles was permitted. C. R. Collier's Matchless, chased home by two Triumph machines, won the 'single' class at 38·23 m.p.h., using petrol at the rate of 94½ miles per gallon. H. R. Fowler headed the twin-cylinder class on a Norton at 36·22 m.p.h., with a fuel consump-

tion of 87 miles per gallon. In 1909, by the abolition of pedals and petrol allowances, the event became a normal race. In 1911 the T.T. shifted to the famous Isle of Man 'Mountain' course. Nearly 38 miles in length, it climbs steeply over a shoulder of Snaefell, and has every imaginable type of corner, with excellent speed straights, both flat and hilly. It has claims to be the best road-racing circuit in the world, though not wide enough for modern motor-car racing. In 1912 separate events for different engine dimensions were introduced; and by the 1939 T.T. there were seventy-eight individual races, and the number of laps per race had been gradually raised to seven, making a total distance of just over 264 miles. This was covered by the 1939 Senior winner in 2 hr. 57 min. 19 sec. The 500 c.c. record lap stands at 91 m.p.h.

The Manx T.T. is nominally international, but foreign entries have never been very large, and foreign victories are rare. Though the roads are closed to the public for a few hours early in the morning for several days before each meeting, it is difficult for foreign riders to memorize so long and arduous a course. Nevertheless, Meier on a 493 c.c. German B.M.W. easily won the Senior Race in 1939, mainly owing to the use of a supercharger (see COMPRESSOR, Vol. VIII). This addition, which doubles the capacity of an engine, is allowed by the rules, but it has not often been used by British designers, as it is difficult to adapt for the popular single-cylinder engines.

The BROOKLANDS Track (q.v.) at Weybridge, with a concrete lap of over 3 miles in length and steeply banked bends, was another first-class testing ground, over which speeds up to 130 m.p.h. could be attained.

In 1939 there were several types of motor-cycle racing, represented by the showman, the sportsman, and the technician. The showman concentrated mainly on DIRT TRACK RACING (q.v.). The sportsman indulged his hobby in many ways—track-racing at Brooklands; road-circuits at Donington and in the Isle of Man; sand racing at Pendine, Southport, and Scarborough; grass-racing at many a rural meeting; short sprints and timed hill climbs on private ground; and cross-country scrambles over rough heaths, often deep watersplashes, huge sand-bunkers, appalling mire, and gradients far stiffer than any road could supply. The famous Scott Trial in Yorkshire was the first of such rough-riding fixtures.

THE START OF THE JUNIOR TOURIST TROPHY RACE IN THE ISLE OF MAN, 1948. *Graphic Photo Union*

The more formal and technical aspects, covering all world's records, are superintended by the *Fédération Internationale des Clubs Motocyclistes*, whose motto *Pro Virtute et Scientia* indicates the ideals which inspire it. This body controls, verifies, and registers time, speed, and distance records for motor-cycles, classified in terms of their cylinder capacity from 125 to 1,000 cubic centimetres. Periodically it prints a brief summary of the current figures, which range from a mere 64 m.p.h. by a 125 c.c. New Imperial, to Henne's 'world's fastest ever' 174 m.p.h. on a 493 c.c. B.M.W. They include such curious feats as the riding of 50,000 kilometres (equivalent to 1¼ circuits of the earth) at 68 m.p.h. by a team of French officers on Montlhéry track in 1939.

After the First World War teams of British riders formed 'travelling circuses' to compete in the Grand Prix races organized in many continental countries. They swiftly established a remarkable supremacy; the 500 c.c. Norton T.T. engine, for instance, became famous as the most efficient petrol engine in history, developing, within a cylinder the size of a small jam jar, over 50 brake horse-power, without a supercharger.

During the six years before the Second World War both Germany and Italy began to construct special racing models, regardless of expense, and they secured many of the most coveted records. Germany annexed the world's fastest two-wheel speed at 174 m.p.h., and the Italian Taruffi, riding a 493 c.c. Gilera, covered 128 miles in an hour on the Brescia-Bergamo *autostrada*. Sergeant Meier of the German Army won the 1939 Senior T.T. on his supercharged B.M.W.

After the Second World War British motorcycle racing was hampered not only by the conversion of Brooklands track to other purposes and the requisitioning of Donington by the Government, but also by the fact that the export drive left no margin for concentrating on highly specialized types of racing machines. Italy, who had continued research to some extent during the war, was better prepared than any rival for the future. In the U.S.A., cheap petrol and cheap cars overshadowed the motor-cycle, and Russia lacked good roads, and had hardly begun to design motor-cycles. International motorcycle racing, therefore, on the grand scale, will take some time to revive fully.

See also Vol. IV: MOTOR CYCLE.

MOUNTAINEERING. When you climb mountains, you may be trudging through deep heather; wriggling up a rock chimney; straddling a knife-edge ridge; pushing up a snow-slope on skis; cutting steps in ice; picking your way up the loose stones of a glacier moraine; cautiously testing the snow-bridge over a glacier crevasse; stepping delicately on slabs at an angle of 30°. It may be necessary to do three or four of those things on one expedition: the real mountaineer has to learn to do all of them. He also has to learn to find his way by compass across mountainous country; to make a comfortable bivouac if benighted; to cook on a camp-fire, to judge the weather and his own powers, and to know when to turn back. People who are proficient in one branch only, such as rock-climbing or ski-ing, are not mountaineers.

The British mountains can offer a great variety of climbing. In North Wales, the Lakes, Skye, and the Highlands there is first-class rock-climbing. In the Lake District alone there are some 400 recognized rock climbs. In North Wales and the Lakes the climbs are close to centres such as Pen-y-Pass and Ogwen, or Wasdale, Borrowdale, and Langdale; and the magnificent porphyry cliffs of Ben Nevis rise directly

above the Scottish Mountaineering Club's hut. In Skye and Glencoe the distances are greater; there is good rock-climbing in the remote North-West Highlands, in the Liathach and An Teallach massifs of Wester Ross, on Suilven and the Assynt hills of Sutherland. The Highlands in general, and the Cairngorms in particular, the Pennines, the Lake District, and Central Wales are good training-grounds for endurance and route-finding. In fine weather there is no technical difficulty, but in mist or snow it is an achievement to hit off the right route. Men have died from exposure in winter and spring blizzards on the Cairngorms.

On the British hills in winter, especially in the Highlands, it is possible to learn something of the technique of snow and ice: how to cut and kick steps, how to cross steep snow-slopes without starting an avalanche, how to glissade down snow safely (you stand and slide, using your ice-axe as a rudder and brake). To become really experienced, however, the climber must go to the higher ranges, with glaciers and permanent snow.

The essential climbing equipment is simple: boots, rope, ice-axe, windproof clothing with plenty of room for extra sweaters beneath. The rope, which should be most carefully chosen with the help of an expert, may be of hemp, flax, or nylon. The length depends on the size of the party and the climbs to be attempted: 120 feet is a useful length. Line, thinner than standard climbing rope and less than half the weight, is useful for 'abseiling', or roping down, a method of descending steep rock quickly. The line is passed round a projection so that equal lengths hang down, and the climber, already secured by the climbing rope, lets himself down on the double line, which is passed round his thigh and shoulders in such a way that he can control the speed of the descent. Climbing boots should be large enough to take two pairs of socks or stockings; the type of nailing depends on the type of climbing to be undertaken. 'Vibrams'—boots with moulded rubber soles—have recently become popular among Alpine climbers. Rubbers are much used on rocks in dry weather— they can be a death-trap in wet. In many parts of the Alps, especially the Tyrol and Dolomites, rope-soled slippers are carried in the sack for use on the actual rocks. 'Crampons' (ten-pronged climbing irons which are strapped on to climbing boots) are used on steep snow-slopes; 'pitons' (iron pegs with a ring at one end, hammered into rocks to provide an anchor) are favoured by some continental climbers, but frowned on by the British. Skis have become increasingly used in winter and spring mountaineering in the Alps, both in the approaches to a mountain and in the complete ascent of snow mountains.

The climbing unit is the 'rope', or party of two, three, or four climbers tied on to the same rope. The leader, normally the best climber, should be responsible for decisions about route and weather. On difficult rock only one person moves at a time: when the leader arrives on a stance he safeguards himself by anchoring the rope round a projection of rock before calling on No. 2 to climb up; should the latter then fall, his weight will not come direct on the leader. This technique of 'belaying' must be learnt in practice with other climbers, and not from the pages of a book; similarly balance and rhythm, the various types of grip and action, can only be learnt on the rocks themselves.

To start climbing, therefore, the beginner must find experienced people willing to teach him. There are only a handful of professional

ROCK-CLIMBING ,
Ascending Gimmer Crag at the head of Langdale in the Cumberland Lake district. *G. P. Abraham Ltd.*

guides in Great Britain (in North Wales and the Lakes), but there are numerous climbing clubs: most universities have their mountaineering clubs, and there are regional clubs, such as the Fell and Rock Climbing Club (Lake District) and the Scottish Mountaineering Club. Several of the English clubs have climbing huts in North Wales and the Lakes, the Scottish Mountaineering Club has huts on Ben Nevis and in Glencoe; and the clubs organize meets where the beginner can climb with his betters. The Central Council for Physical Recreation has organized training meets in Wales and the Cairngorms.

A 'ROPE' OF CLIMBERS CROSSING AN ICE RIDGE IN THE SWISS ALPS
Swiss Federal Railways

Fifty years ago most British climbers had learnt their Alpine technique from guides: but to-day the cost of a guide is beyond the means of most of the climbers who, after becoming proficient on their home hills, wish to start in the Alps. For those with no experienced friend to initiate them the Alpine Club has (since 1948) organized meets.

MOUNTAINEERING, HISTORY OF. Before

the 18th century most travellers regarded mountains as barriers to be crossed at their easiest points. Hannibal crossed the Alps with an army; the Romans made ways over grass passes below the snow-line; by the 11th century the Great St. Bernard Pass was the recognized route for northern pilgrims to take to Rome. The mountains seen from the passes were looked on with superstitious dread. Even to-day there are peoples—the Tibetans, for example—who believe that they are the strongholds of evil spirits. Only a few isolated ascents were made: of Mont Ventoux in Provence (by Petrarch, 1335); of the Roche Melon in Savoy (where in 1358 a chapel was built on the summit); of the Mont Aiguille near Grenoble, a difficult rock climb carried out by Antoine de Ville in 1492 at the command of Charles VIII of France. In the 16th century there was something like a school of mountaineering at Zürich in Switzerland, where two professors at the University, Conrad Gesner and,

later, Josias Simler, climbed mountains mainly in order to study botany, but also for pleasure. Primitive as their climbing craft was, both Gesner and Simler show in their writings the first stirrings of the 'sporting' attitude towards mountains. Josias Simler published a commentary on the Alps in 1574 which shows actual experience of glacier travel, and of the use of rope, alpenstock (climbing sticks), and crampons (spiked iron plates on climbing shoes).

The early 18th century saw more books about the Alps and more interest in Alpine exploration. In 1741 William Windham, a young Englishman, made an expedition to the little-known region of Chamonix in the valley under Mont Blanc, and visited the Mer de Glace, the long glacier that flows down from the heart of the range. With seven companions and a troop of local guides he climbed to the Montanvert, from which he was able to overlook the great Mer de Glace, like, as he happily expressed it, 'a lake put in agitation by a strong wind, and frozen all at once'. Windham's vivid accounts led others to explore the Alpine valleys and mountains. Horace Bénédict de Saussure, a professor at Geneva, visited Chamonix in 1760 and offered a prize for the discovery of a practicable route to the summit of Mont Blanc (15,782 feet), where he wished to make observations. The prize was won in 1786 by the Chamonix doctor Michel Paccard and the

THE CONQUEST OF THE MATTERHORN

Frontispiece from Edward Whymper's *Scrambles among the Alps*

peasant Jacques Balmat. De Saussure himself, who had explored the glaciers and valleys of the range and made several attempts on the summit, made the ascent in 1787. Six days later Colonel Mark Beaufoy climbed Mont Blanc—the first Englishman to do so. The first woman up was Maria Paradis, a village girl, in 1809. The men of Chamonix, who had long hunted chamois on the mountains and searched for crystals, now found a fresh occupation in guiding travellers; and a corps of mountain guides was formed there as early as 1823.

In other regions of the Alps peaks were conquered by explorers and scientists with the help of local peasants. In the Tyrol the Gross Glockner was climbed in 1800, and the Ortler in 1804; in the Bernese Oberland the Jungfrau was climbed in 1811, and the Finsteraarhorn in 1829. The first Briton to undertake serious explorations of the Alps was the geologist, J. D Forbes, who between 1835 and 1853 visited the Pyrenees, the Dauphiné, the Tyrol, the Dolomites, and the mountains of Norway, as well as the central Alps, and wrote about his travels in books that aroused great interest. From 1855,

when Charles Hudson's party made the first ascent of the highest point of Monte Rosa, and then climbed Mont Blanc without guides, British climbers enjoyed a golden age of exploration and first ascents. In 1857 the Alpine Club, the earliest of all mountaineering clubs, was formed. By this time climbing had developed a definite technique. Route-finding and bivouacking had been brought to a high pitch of efficiency; experience had taught the proper use of feet and hands, and the niceties of rope and axe manipulation; and men had learnt, or were swiftly learning, to recognize the various types and conditions of snow, the symptoms of danger in rock, the threat of the crevasse, and the vagaries of Alpine weather. The most remarkable record was that of Edward WHYMPER (q.v. Vol. V), whose *Scrambles among the Alps* has probably interested more young people in climbing than any other book. After making splendid first ascents in the Dauphiné and Mont Blanc districts, Whymper, at the age of 25, conquered the Matterhorn in 1865, having joined forces with Hudson's party. On the way down one man slipped, a rope broke, and four men, including Hudson, were killed. This tragedy caused much criticism of the new sport: John Ruskin accused climbers of regarding the Alps as no more than 'soaped poles in a bear-garden', and Queen Victoria urged that mountaineering should be prohibited by law. But climbing went on. The new generation of British mountaineers, such as Leslie Stephen, author of *The Playground of Europe*, cared less for the scientific secrets of the mountains and more for the actual fun of climbing. Some of them enjoyed climbing without guides; some of them concentrated particularly on rock climbs, as did A. F. Mummery, who made the first ascent of two of the rock teeth in the Mont Blanc range known as the Chamonix Aiguilles; and some found new and more difficult ways up well-known peaks.

About 1880 climbers turned their attention to the home hills, and men in tweeds and deerstalker caps discovered on Snowdon and Scafell, Pillar and Ben Nevis, Glencoe and the Coolins of Skye, rock climbs as difficult as any they had undertaken in the Alps.

By then mountain explorers were extending their range far beyond the Alps. By 1864 Clarence King was surveying and climbing in the Sierra Nevada of Southern California. In 1868 D. W. Freshfield led the first expedition to

the Caucasus; in 1879 80 Whymper made his first expedition to the South American Andes and climbed the 20,498-foot Chimborazo; in 1897 the Italian Duke of the Abruzzi conquered Mount St. Elias (18,092 feet), the highest point of the Alaskan range in North America. W. C. Slingsby did pioneer work in the mountains of Norway; W. S. Green, with two Swiss guides, pioneered the way to the top of Mount Cook in the New Zealand Alps in 1882, though the summit was not reached till 1894; and there were British, German, Belgian, and Italian expeditions to the highest mountains of Africa—Kilimanjaro, Ruwenzori (the Mountains of the Moon), and Mount Kenya. In the Himalayas, W. W. Graham reached 24,015 feet on Kabru in 1883, an altitude record which remained unbroken for 26 years. Sir Martin Conway explored the glaciers of the Karakoram in 1892; and in 1895 Mummery died on a reconnaissance of Nanga Parbat. In 1899 Freshfield surveyed the approaches to Kanchenjunga, one of the highest of the Himalayan peaks. In 1907 Dr. T. G. Longstaff ascended the 23,406-foot Trisul in Garwahl, setting up a record for the highest summit attained by man, which remained for 23 years.

In 1920 began the attempts on Mount EVEREST (q.v. Vol. III); on the 1924 expedition, during which Mallory and Irvine did not return from an attempt on the final peak, climbers reached a height of over 28,000 feet. There were four further attempts on Everest before Sir Edmund Hillary and the Sherpa Tensing, members of

the expedition led by Sir John Hunt, eventually reached the summit early in June 1953. Various other Himalayan peaks have been attempted. The 26,600-foot Nanda Devi, reconnoitred in 1934 by Eric Shipton and H. W. Tilman, and climbed in 1936 by Tilman and N. E. Odell, remained the highest summit reached by man until 1953. Other climbers of the 1920's and 1930's turned their attention to the mountains of Greenland and Spitzbergen, Alaska and the Rockies; in the Coast Range of British Columbia alone there are still dozens of unclimbed peaks awaiting the mountain explorers of the next generation.

Mountaineering is now solidly established as a sport, and in most mountain districts climbing clubs flourish. English climbers are fortunate in that the homeland hills are excellent training-grounds on rock which is incomparably sound. Though by Himalayan and even by Alpine standards the faces are small, there is a rich variety of routes, many of them severe tests. In Skye, for example, the igneous rock known as 'gabbro', of which the rocks are composed, is grandly weathered, but not old enough to have worn smooth; so that holds and toe-scrapes are generally available.

Of recent years mountaineers have tended to specialize in one or other branch of the craft, according to the type of training-ground nearest to hand. Thus, most English climbers are primarily cragsmen; so, too, are the Germans; while the Swiss and Norwegians have concentrated on snow and ice-craft. The term 'mountaineering' applies to every method of ascending mountains safely, and embraces rock-climbing, the passage of snow-slopes, glaciers, and ice-falls, and mountain travel on skis. The all-round mountaineer is as much an explorer as a climber; and for expeditions to great and remote ranges, such as those of Kashmir or Alaska, the mountaineer must also have a talent for large-scale organization (see MOUNTAINEERING).

See also Vol. III: MOUNTAIN-BUILDING; ALPS; ANDES; ATLAS; CAUCASUS; EVEREST; HIMALAYAS.

MUMMERS PERFORMING ON PLOUGH MONDAY
The male and female clowns, Tommy and Bessy, took part in this traditional play.
From *The Costume of York*, 1814

MOUTH ORGAN, *see* REED ORGANS.

MUMMERS. The performances of mummers are among the oldest forms of drama, and they still keep much of their primitive character. Mumming is essentially a performance for the common people, and is not intended for the stage or for a sophisticated audience. It has its origin in the primitive pagan ritual performed to propitiate the forces of nature. It began with a sword-dance, the climax of which was the locking of the swords above the head of the pretended victim to symbolize the death of the spirit of life or of the old year (*see* FOLK DANCING, BRITISH). Then there followed a dance of rejoicing, when the swords were withdrawn and the victim survived, just as life is renewed in the spring. The idea in the sword-dance is obviously connected with ancient fertility RITUALS (q.v. Vol. I), and it goes back at least as far as Roman times.

During the 15th century the dance form was expanded into a crude dramatic shape with character and dialogue. There has been little change from that time to the plays of the present day, which are still performed in a few country districts. The version varies in detail from place to place, but always follows the pattern laid down in the sword-dance. There is a short prologue, craving the hearers' attention and introducing the show, rather like that of the rustics' play in *A Midsummer Night's Dream*. The central incident is a fight which brings the hero to the point of death. He is brought back to life by the doctor, who represents the medicine-man of the original pagan ritual. At the end, all the characters join in general clowning and gaiety. The hero may be St. George, Robin Hood, or one of several other national heroes from legend or the ballads; the villain may be the Turkish knight from the Crusades or any other typical enemy. There are male and female clowns, often called Tommy and Bessy.

The players taking part in the plays were never professional actors, but local people. The words of the play were not written down till a much later date, but were passed on verbally from actor to actor. The actors wore masks or had their

faces blackened, and they performed the play in manor-house or farm. Because of its ritual origin it is connected with special seasons of the year, and is part of the thanksgiving spirit of Easter, of harvest-time, or of Christmas, when it is supplemented with carols. It still survives on the Continent as well as in England, together with many other customs and symbols, such as the maypole, which go back to the very early ages of man's history, when his life and his beliefs were closely bound up with the fields and with the forces of nature.

See also FOLK DANCING.

MUSICAL BOX. This instrument is worked like a BARREL-ORGAN (q.v.), on the barrel-and-pin principle; but instead of pipes or reeds a metal comb is used, the teeth of which are graduated in length and yield notes of different pitch. The barrel and pins are also made of metal. As the barrel revolves, the pins pull aside the teeth of the comb, and melodies of a high pitch are produced. The barrel is made to revolve by a clockwork mechanism which has to be wound up with a key. Musical boxes are made in various forms. Some resemble a snuff-box, others are fashioned like a little house which begins to play when the roof lid is raised. Others are chairs which begin to play when they are sat upon, and there are also jugs which play a tune when they are lifted. Nowadays musical boxes are chiefly made in Switzerland. The music of a musical box can be imitated by playing simple melodies, and harmonies on the highest notes of a piano. A piano composition called *The Snuff-Box Waltz* was popular about a hundred years ago, and another well-known piece in imitation of a musical box is Liadoff's *Tabatière à musique*.

MUSICAL COMEDY is a form of entertainment characteristic of the English and American theatre. It derives from vaudeville (*see* MUSIC-HALL), which was originally a satirical Paris street-song, and has now become synonymous with a variety entertainment; and also from opera-bouffe, which meant originally a short interlude between the acts of an opera and, later, comic opera itself. The plot of a musical comedy is slight and matters little; but it serves as a framework for the singing, dancing, and fooling of the performers. Catchy tunes, dancing, an attractive chorus, and burlesque are recognized

AN OPENING SCENE FROM THE FOLIES-BERGÈRE REVUE AT THE OLD MUSIC-HALL IN THE RUE RICHER, PARIS
Picture Post

features. Musical comedy probably reached its highest level at the Gaiety Theatre about 1910.

A Revue is similar to a musical comedy in many ways, but completely dispenses with a plot. This type of entertainment originated in Paris, and has always contained in songs and sketches a great deal of satirical comment on the politics and events of the day.

A cabaret (the word means a French tavern) is an entertainment provided in restaurants and night clubs, and at balls, while the guests are having refreshment. The entertainment usually consists of about three turns of different kinds, and may include singing and dancing, acrobatics, and burlesque.

MUSICAL INSTRUMENTS. 1. In order to understand how instruments are played it is essential to have some knowledge of acoustics, which may be regarded for this purpose as the study of sound in relation to music. In the process of hearing a musical sound three factors are involved: an instrument for the sending out of sound-waves; a medium for carrying the waves; and an instrument, such as the ear, for receiving the waves and translating them.

In the course of the centuries hundreds of musical instruments have been invented, there being numerous ways in which sound-waves may be produced (*see* Sound and Wave Motion, Vol. III). Musical instruments can, however, be divided into three main groups, in which three main methods of producing sound are used.

(*a*) Instruments in which sound is produced by the vibration of a string: it may be bowed, as in String Instruments; plucked, as in Lutes and Guitars; or struck, as in Keyboard Instruments (qq.v.).

(*b*) Instruments such as flutes or trumpets, in which a column of air is vibrated in a tube by blowing (*see* Brass Instruments and Woodwind Instruments).

(*c*) Percussion Instruments (q.v.), such as drums and cymbals, in which sound is produced by striking.

Whatever method is adopted for producing the sound, the final result is to send out sound-waves which are carried by an intermediate medium, usually the air, to the receiving instrument. Sound-waves can vary in two ways:

(1) In length. The longer the wave, the lower the frequency (the number of vibrations per second), and the lower the pitch of the note.

(2) In amplitude. The greater the amplitude the louder the sound.

2. Pitch. The length of the tube or string determines the length of the sound-wave, and consequently the number of wave motions or frequencies which are produced. The pitch of a note depends, therefore, upon the length of the tube or string which produces it. This, however, is not the only factor to be considered. A violin string which is slack or thick will vibrate more slowly and give a lower pitch than a string which is tight or thin. Thus, to raise the pitch of a note on the violin the tension of the string is raised by turning a peg. In dealing with other instruments, however, these additional factors become of little importance, and length mainly decides the pitch. A pipe, about 2 feet long, open at both ends, which is set in vibration, transmits sound-waves at the rate of 256 per second and produces the note middle 'C'.
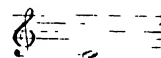
Whatever material is used in the pipe or whatever its bore, the 'fundamental' note in a 2-foot pipe is middle 'C'. A pipe twice that length, 4 feet, produces the octave below, with a frequency of 128 per second:
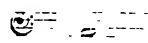
and a 1-foot pipe has a frequency of 512 per second and produces a note an octave above middle 'C'.
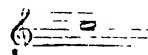

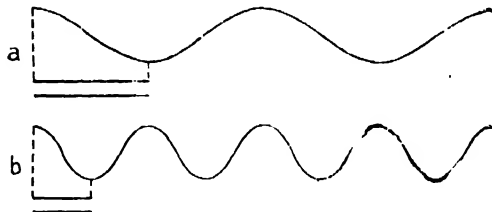Fig. 1 shows the relationship between length and frequency.

FIG. 1

PIPE (*a*) gives a note with the wave-length of the top curve PIPE (*b*) (Half the length) gives a note of half this wave-length, twice the frequency, and an octave above the other in pitch

3. HARMONICS. A pipe or string which is vibrating not only produces a note equivalent to its length, that is to say, its 'fundamental' note, but at the same time it transmits other waves which are subdivisions of the fundamental. These further subdivisions are called 'harmonics'. The harmonics are produced in a fixed sequence which is known as the 'harmonic series'. The harmonics always bear the same relationship to the fundamental.
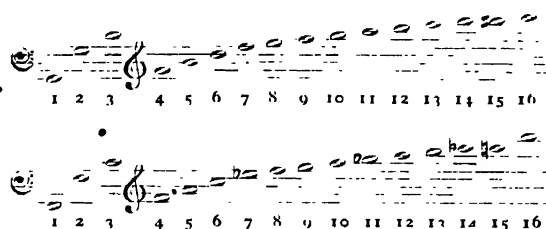
Not all these harmonics are heard by the ear, and it is seldom that more than three or four can be distinguished by the normal person. That they are actually produced can be proved by scientific instruments, which not only detect their presence, but can also register the intensity of each harmonic in relation to the fundamental. Both 'natural' and 'false' harmonics produced by string players are a practical application of the harmonic series. Touching a violin string lightly instead of 'stopping' it divides the string
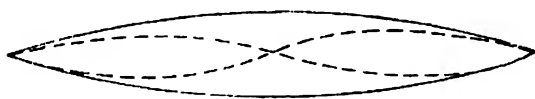

FIG. 2
The full line shows string vibrating at the fundamental note. The dotted line shows it vibrating at its first harmonic (an octave above)

into half-sections, each of which vibrates and produces a note an octave higher than the open note; and in the case of 'false' harmonics into four quarter-sections, producing a note two octaves higher than the full length of the vibrating portion of the string. The particular harmonics which are most prominent depend upon the shape of the instrument producing the original fundamental note. For instance, in the clarinet harmonics 2 and 4 are almost non-existent. The characteristic quality of an instrument or sound is governed by the harmonics which are emphasized.

The Hammond Electric Organ (*see* ORGAN) builds up electrically the harmonics above the fundamental, and so obtains infinite variety of tone, colour, or quality without the use of specially-shaped pipes or reeds.

4. BEATS. If two notes of almost the same pitch are sounded together, 'beats' are heard. This beating is caused by an additional emphasis produced at the points where the vibration of the two notes coincide. The effect is easily demonstrated by striking the two lowest notes of the piano together. Organ makers have used this effect in the 'voix celeste' stop, which consists of two sets of soft-tone pipes slightly out of tune with each other. When the beats become loud they produce an audible note of their own, which is called a 'differential tone', and the note produced is the difference in frequency between the two original notes played.

5. AMPLIFICATION OF SOUND. Most musical instruments are designed so that whatever method is employed to produce the sound, the vibrating medium emitting the waves is allied to some form of 'resonating' chamber, so that the sound-waves are enlarged in amplitude, and the actual sound which reaches the ear is increased. The simplest illustration of this is that when a tuning-fork is struck, the sound is greatly increased if the fork is placed upon a hard sounding-board, such as a table. Here the small vibrating fork transfers its vibrations to a relatively much larger medium—the table—and so the amplitude of the wave motion is increased. A violin string itself gives out a very small sound, but as it is in contact through the bridge with the back and belly of the violin it makes them vibrate also, so that the volume is increased.

6. INSTRUMENTAL TECHNIQUE. The technique of playing all musical instruments is governed by details of construction which depend upon the laws of the harmonic series. The trombone (*see* BRASS INSTRUMENTS) will serve as an example to illustrate the general principles involved, although, of course, the technique is different for every instrument.

The tenor trombone in B Flat has as its lowest note:
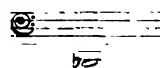
This is a fundamental note (No. 1), and is obtained by using the first position of the slide. By varying the method of blowing, this note may be 'over-blown', that is to say the column of air in the tube divides into two and produces

the second harmonic (No. 2); the lowest fundamental note disappears. Increased over-blowing produces harmonics 3, 4, 5.
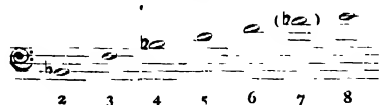
These notes are obtained merely by over-blowing, and the position of the slide is unaltered. The second and third positions of the slide produce the following:

In the 4th, 5th, 6th, and 7th positions the fundamental note cannot be produced, so that the lowest note in each of these positions is the 2nd harmonic in each case:

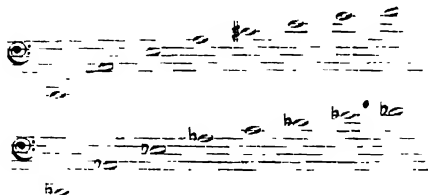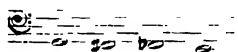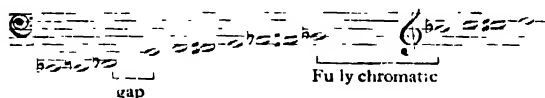In the 1st and 2nd positions the 9th and 10th harmonics can be produced. Thus the actual notes of the instrument which can be played by a combination of over-blowing and movement of the slide are:

In the case of trumpets and horns, the same principle of over-blowing applies, but the actual length of the tube is varied by means of valves in place of the slide.

With wood-wind instruments the system of over-blowing again applies, but the length of the tube is varied by holes cut in the side of the tube. The production of harmonics is not a regular method of technique with string instruments, although harmonics are sometimes used for special effects. Variation in pitch is obtained by shortening the string by means of finger-pressure on the finger-board, or by increasing the tension on the string by turning a peg.

7. CARRYING SOUND-WAVES. The usual medium for transference of musical sound is the air, and as sound travels in air at the slow speed of 1,120 feet per second the control of echo has always presented a difficult problem in the construction of concert halls. Everyone is aware of the hazy effect produced by the large number of echoes which follow one another in rapid succession when music is played in a cathedral; and it is always impossible to obtain clarity of detail under such conditions. When, however, sound is transformed into wireless waves, it travels at the same speed as light, that is to say, 11 million miles per minute. This is the reason why the times of transmission and reception in broadcasting appear to synchronize. Thus a member of the audience sitting at the back of a concert hall receives the sound later than would a listener 500 miles away hearing a broadcast of the same performance.

8. RECEIVING SOUND-WAVES. What has been said so far on the question of sound-waves has been considered in the main from the effect produced by one or at the most two notes. It is difficult for the human mind to grasp the great sensitivity of the ear which, when music is being played, receives a host of sound-waves varying in frequencies, amplitude, quality, rhythm, and design. It is even more amazing that a trained musician can translate an orchestral score into imagined sound from the printed note without any aid of actual sound from the instruments involved.

See also ORCHESTRA; SINGING.

MUSICAL INSTRUMENTS, HISTORY OF.
From earliest times mankind has played upon many kinds of instruments, and from the writings, sculpture, and carvings of ancient civilizations we can trace the development of many of them from their simple forms to their elaborate modern designs. It is not, however, always possible to establish their country and dates of origin. Many of them—the HARP and LUTE (qq.v.), for example —existed in most ancient civilizations, although sometimes in different forms. Some early instruments, such as the tambourine, have changed very little in the course of many centuries, while others—the flute, for instance—have passed through many stages.

No doubt the first musical instruments were simple PERCUSSION INSTRUMENTS (q.v.), such as the tom-toms of the tribes of Asia and Africa, which primitive people still use to accompany their ritualistic dances. A simple pipe made of reed or cane, in which holes were bored, was

probably the first instrument on which a melody could be played, and was the ancestor of the modern flute (*see* WOOD-WIND INSTRUMENTS). STRING INSTRUMENTS (q.v.), such as the lyre, were a later development. The earliest horns (*see* BRASS INSTRUMENTS) were the actual horns of animals used to give signals and to summon assemblies.

Musical instruments of ancient China were chiefly of the percussion type, such as wooden rattles and cymbals; and it is interesting that in the rhythm section of the modern dance band instruments known as the Chinese wood-block and the Chinese cymbal are still used (*see* DANCE BANDS). The old Chinese instrument, the cheng, appears to be the ancestor of the mouth organ, accordion, and other REED ORGANS (q.v.). The cheng, which is shaped like a teapot, consists of a gourd fitted with bamboo pipes. The reed is a thin metal plate in which a tongue is cut, closed at one end and filed at the other, so that it vibrates as air is passed through it. It was probably introduced into England in the late 18th century by Abbé Vogler, who had seen a cheng in Russia.

The Egyptians and Assyrians made great use of musical instruments such as harps, lutes, lyres, and sistra. The sistrum, an Egyptian instrument, was a kind of metal rattle which could be played either by shaking it or hitting it with a stick. It was used by the priests of Isis to attract worshippers to parts of the ritual service, and was also considered efficacious in frightening away evil spirits. They also played a long flute which was called the nay.

The lyre was the favourite instrument of the Greeks. It actually originated in Asia, and probably came to Greece by way of Thrace or Lydia. Orpheus, the great mythical player of the lyre, was a Thracian. The lyre was like a small harp, except that it was played with a plectrum instead of the fingers, the strings being 'stopped' with the left hand. There were several varieties of the lyre with different names, such as the chelys. The cithara was similar to the lyre and was probably the instrument played by professional musicians at the Pythian Games, the lyre being the chief domestic instrument. The syrinx or pan-pipes consisted of a number of pipes stopped at one end. Each pipe gave out one note, but by blowing harder harmonics could be produced. The name 'pan-pipes' arose from the legend of the god Pan pursuing the nymph Syrinx. She
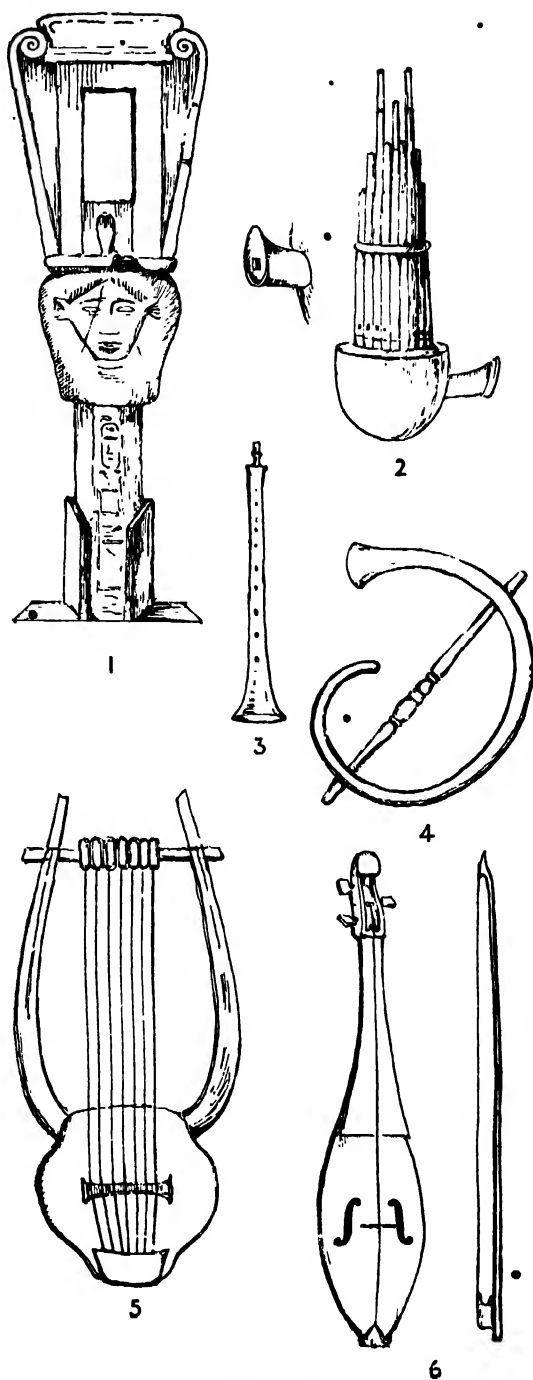

ANCIENT MUSICAL INSTRUMENTS
1. Egyptian Sistrum; 2. Chinese Cheng and Mouthpiece;
3. Shawm; 4. Roman Buccina; 5. Greek Lyre; 6. Rebec and bow

was turned into a bundle of reeds; and when Pan noticed that they made music when the wind blew them, he cut them down and played upon them.

The Romans made great use of military instruments such as the lituus, their cavalry trumpet, which consisted of a cylindrical tube about 4 feet long, and the buccina, a brass instrument consisting of a tube bent round like a letter C. It was held by a bar stretched across the curve. The buccina was used to give signals in the army and to sound the watches in camp. The most ancient form of the ORGAN (q.v.), the hydraulus, or water organ, was also played in Rome. An example of one dated A.D. 288 has been discovered in Roman ruins near Budapest. It resembles our modern organ to a surprising degree. The actual invention was probably Egyptian.

The Bible is full of references to Jewish musical instruments, but it must be remembered that the 17th-century translators used many of the names of instruments common in their own day 'to translate names of instruments unknown to them. The Levites in the Temple of Solomon are said to have had harps, cymbals, and psalteries (the psaltery was well known in England in the 14th and 15th centuries, and was the predecessor of the harpsichord). Pipes, harps,
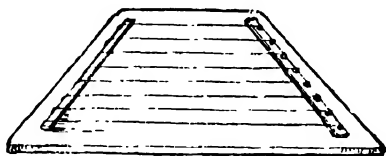
18TH-CENTURY PSALTERY

and timbrels (ancient tambourines) are mentioned frequently. Miriam danced and played a timbrel on the shores of the Red Sea; King Saul was soothed by David's harp; in the book of Daniel, Nebuchadnezzar issued an edict to the people that when they heard the sound of the harp, lute, sackbut, psaltery, and dulcimer, they should bow down and worship. The priestly trumpet, known as the shophar, was a long, curved horn, rather like the Roman lituus.

The Arabs had a great influence upon music, and at the time of the great waves of Arab conquest in the 7th century, they were responsible for introducing several instruments from the east into Europe. The names lute, guitar, rebec (an early form of violin). and naker (an

old name for the kettledrum) are all Arabic in origin.

In the Middle Ages it is difficult to trace the development of instruments. No doubt such instruments as the harp, the lute, the BAGPIPE, the HURDY-GURDY and others were played frequently, especially by travelling MINSTRELS (qq.v.). From the 14th century, however, it is easier to establish what were the most popular instruments of the time. It is interesting that although the origin of so many instruments was eastern, it was in Europe after the Middle Ages that they were developed with such skill; in the east, on the other hand, instruments have tended to remain more in their early state. By the 14th century the sackbut was well known, especially as an instrument in royal bands. The sackbut is almost identical with the modern trombone (see BRASS INSTRUMENTS). The lute, as with the Greeks, continued for a long time as the favourite solo instrument. Chaucer and Shakespeare mention it frequently. By the 16th century shawms and pommards had become popular. Later these were called hautbois and grosbois. Hautbois was later anglicized into hautboys, and later still into oboe, by which name the instrument is known to-day. RECORDERS (q.v.) were very popular in the 16th and 17th centuries until they were replaced by the modern side-blown flutes. VIOLS (q.v.) had replaced practically all string instruments; and by the 17th century they too were being superseded by the violin and the other modern string instruments. The harpsichord was the favourite domestic instrument from the 16th to 18th centuries, when it was superseded by the piano (see KEYBOARD INSTRUMENTS). From the 17th century serious experiments were begun in combining musical instruments into an ORCHESTRA (q.v.). At the beginning harpsichords and viols were included, in addition to flutes, hautboys, and brass instruments. Gradually, however, certain instruments were discarded, until the present form of the orchestra was generally adopted. The youngest instrument to find a place in the orchestra was the clarinet, which was derived from a simpler form called the chalumeau.

MUSIC AND DRAMA FESTIVALS. The
word 'festival', in the sense of a series of performances of music, drama, or both, seems to have come into use in England during the Commonwealth. In 1655 the Festival of the

Sons of the Clergy was founded, at first simply an annual charity-sermon, but by the time of the Restoration it had developed into a musical event with an orchestra and a choir. Festivals have played an important part in the cultural life of England, as well as in certain Continental countries and in the United States. People come from far away to participate in and listen to the performances.

Some festivals, such as the Sons of the Clergy, are held regularly; many are associated with certain places, such as Edinburgh and Salzburg; and some are specially organized to celebrate a particular event, such as the commemoration of a great composer's birth or death. In the 1780's, for example, great festivals were held in Westminster Abbey in honour of Handel's music. Festivals may consist entirely of musical performances, as at the Cheltenham Festival, or entirely of drama, as at the Malvern; or they may be composed of both, as at Edinburgh. Furthermore, festivals may be competitive or non-competitive. Some festivals also include verse-speaking, and since 1946 there has been an annual competitive festival of spoken poetry held in London.

The next festival instituted in England after the Sons of the Clergy was the Three Choirs Festival, which is held in turn in the three cathedral cities of Gloucester, Worcester, and Hereford. It was founded in 1724 with the object of raising money for charities. The festival, at which the musical forces of the three cities combine, lasts for three days. Other old-established festivals in England are the Norwich, founded in 1770, and the Leeds, which has been held since 1858. Both these festivals, which are entirely devoted to music, were originally designed to raise money for charity.

Festivals have frequently been the means of encouraging new works. The Annual Cheltenham Festival, for example, which lasts for two weeks, gives special prominence to contemporary British music; and the International Society of Contemporary Music, which is held in turn at musical centres such as Salzburg, Vienna, and Oxford, has given an opportunity to modern composers both to have their own work heard and to hear that of others. The Edinburgh Festival, which was first held in 1947, includes not only orchestral, choral, and chamber music, but performances of ballet, opera, and drama. This festival became in a short time an event

of great artistic importance, not only for Great Britain but for other countries.

In Wales the most famous festival is the Eisteddfod, which means literally a 'sitting'. It is one of the oldest in the world. There is a reference to an Eisteddfod in the 7th century, at which King Cadwaladr presided. It is a competitive festival and includes music, drama, and poetry. During the festival certain bardic rites and ceremonies, presumed to be based on customs in ancient Britain, take place. One of the most important is the chairing of the bard, the winner in the chief poetry competition, who takes possession of a massive, specially designed chair, which is a much coveted honour. During the year small local Eisteddfodau are held throughout Wales, which are modelled on the national festival but do not include the rites.

Other popular competitive festivals held in Britain are BRASS BAND Contests (q.v.), which are particularly popular in the north of England, and dramatic festivals organized by the DRAMA LEAGUE (q.v.) in which amateur companies take part, professional actors acting as judges.

Among the best-known festivals on the Continent are the Lower Rhine Festival (dating from 1817), which resembles the English Three Choirs Festival in that it is held annually in turn at Cologne, Düsseldorf, and Aachen; the Bayreuth Festival devoted to the works of Wagner; and the Mozart Festival at Salzburg in Austria. In the United States about 120 permanent festival organizations are said to exist, among the best known being the Bach Festival at Bethlehem in Pennsylvania and the Berkshire Festival for chamber music held in Pittsfield.

See also CONCERTS; SINGING, ACTING.

MUSIC-HALL. A 'music-hall', 'variety', or 'vaudeville' entertainment consists of a number of separate acts, or 'turns', which may include singing, dancing, acrobatics, juggling, and character-sketches. Nowadays the term music-hall applies more to this type of entertainment than to the place where it takes place; music-halls themselves are often used as theatres or cinemas, while a variety entertainment broadcast from a B.B.C. studio is known as a music-hall. The term 'vaudeville' is more common in the United States than in this country. Originally a vaudeville was a Paris street-song of a satirical nature, and towards the end of the reign of Louis XIV these songs became a feature of
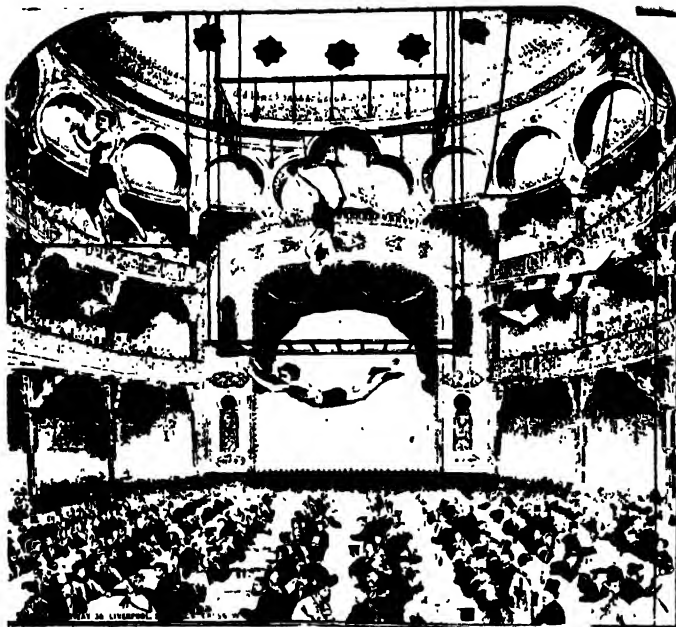
ACROBATS PERFORMING IN A VICTORIAN SALOON THEATRE
From a coloured lithograph, 1876, of the Panopticon, later the variety
theatre, the Alhambra. The performance took place over the heads of
the diners, instead of, as was more usual, on a platform stage
Enthoven Collection, Victoria and Albert Museum

the comedies acted at the annual Paris fairs. Music-hall originated in the inns and taverns of England, where entertainment was provided as a background to eating and drinking. From the beginning the spirit and atmosphere were robust and gay, popular songs with choruses in which the audience joined being a characteristic feature. Throughout the 18th century taverns continued to be the centre of popular entertainment. At Sadlers Wells, for example, now the home of ballet, professional turns were given by the waiters and other artists. Later these performances became known as 'free and easies'. The main purpose was still the sale of refreshments; there were no printed programmes, but instead a chairman presided over the entertainment. He was usually showily dressed, and sat at a table with his back to the stage, rapping the table with a hammer as he announced the individual turns. Special guests were invited to sit at the chairman's table. The audience itself took a large part in the entertainment, joining in the choruses of the songs and contributing solo turns.

The next development was the rise of the

'saloon theatres', such as the Effingham in Whitechapel Road and the Grecian in City Road, where the customs and atmosphere of the taverns were still retained. Saloon theatres were not allowed to present what was broadly known as 'legitimate drama'—the plays, for instance, of Shakespeare, Goldsmith, and Sheridan—this right being granted only to the few play-houses which possessed a royal patent. By an act of Parliament in 1843 this restriction was partially removed, but it was not until some time later that saloon theatres ceased to be prosecuted for exceeding what they were entitled to present. At the ordinary theatres, which were under the Lord Chamberlain's control, smoking and eating in the auditorium during the performance was not permitted; but at the saloons the old customs continued, and the audience continued to eat, drink, and smoke while they listened to the artists. In the 1880's music-halls began to be built with proper stages and a tiered auditorium. Soon the office of the chairman disappeared (it has been revived since at the Players' Theatre, London), and printed programmes of the turns were on sale. Although much of the old conviviality of the tavern and the saloons disappeared with the rise of the great variety theatres such as the Alhambra, the Pavilion, and the Tivoli, which were lavishly upholstered and decorated, nevertheless the essential technique of the music-hall turn remained the same.

The talent of the real music-hall artists has always been individual and specialized. By their portrayals of many types of characters they have been able to move their audiences to laughter and tears as they wished; and their character-sketches have been genuine interpretations of life. Nearly all of them have used a song as a basis for their characterizations. Among the most famous artists associated with the music-hall were George Leybourne; Jenny Hill, known as the 'Vital Spark', who portrayed waifs of all kinds; Vesta Tilley, known for her male impersonations; Dan Leno; and, in more recent times, George Robey and Sir Harry Lauder.

See also THEATRE, HISTORY OF; ACROBATS; JUGGLERS.

N O

NAP, *see* CARD GAMES.

NATIONAL ASSOCIATION OF BOYS' CLUBS, *see* CLUBS, BOYS' AND GIRLS'.

NATIONAL ASSOCIATION OF GIRLS' CLUBS, *see* CLUBS, BOYS' AND GIRLS'.

NATIONAL PARKS. When we speak of a park we may have in mind either an enclosure in a town with grass, trees, and flower-beds, playing-fields, and bandstands, and also perhaps a lake or stream, and tracks for riding or racing; or we may think of the grounds surrounding a country mansion, where, besides domestic cattle, there may be a herd of deer (*see* PARKS AND GARDENS). But the word park is also applied to natural tracts of country, often covering hundreds of square miles, with mountains and valleys, forests and rivers, lakes and waterfalls, and where wild animals roam in absolute freedom and preserved from the hunter. Many countries, including Britain, have such national parks, but by far the largest ones are found in South Africa, Canada, and the United States.

The Kruger National Park in South Africa, one of the biggest Wild Life Sanctuaries in the world, has an area of 8,000 square miles. People spending a holiday in the Park stay at rest-camps, and sleep in round huts separated from the wild animals outside only by fences a few feet high. As a rule visitors are not allowed to leave their cars when exploring the Park; but as they motor along its 1,200 miles of roads there are wonderful opportunities of studying beasts and birds in their natural environment. It is quite usual to see lions lying beside the road, elephants wandering through the open woods, hippopotamuses wallowing in the rivers and pools or sunning themselves on the banks, giraffes feeding on the young shoots of trees, and zebra and wildebeeste drinking at the water-holes. Baboons, by far the most intelligent of the Park's wild animals, are frequently observed squatting quite close to the road-side, apparently watching the passing cars with rapt attention. Family parties or groups of smaller monkeys are often seen. The nocturnal animals, however, such as hyenas, cheetahs, and leopards, are naturally seldom visible. Birds range in size from the Martial Hawk Eagle, with a wing-span of 7 feet, to the little Sparrowhawk; and the keen-eyed visitor may spot vultures flying high in the sky. Ostriches are quite common, the male birds attracting attention by their black-and-white plumage, which is much brighter than that of the duller-coloured females.

Some of the most beautiful National Parks in

ZEBRA AND WILDEBEESTE DRINKING AT A POOL IN THE KRUGER NATIONAL PARK
South African Railways

the world are found in Canada. Two of the largest, Banff and the adjoining park of Jasper, are together as large as Wales. They form a magnificent stretch of country along the eastern side of the Rockies, the lower slopes of which are girdled with forests, and the higher ranges crowned with snow-clad peaks overlooking glaciers and ice-fields.

Visitors are not likely to come across grizzlies, as these dangerous bears prefer cool air and live in the higher and less accessible areas; but they will be sure to see ambling along the roads shaggy black bears with their cubs. These are so tame that they often sidle up to stationary cars and stand beside the windows hoping to be fed. Bears are usually to be found by the rubbish-dump not far from Jasper town, or beside the heap of rejected tins behind the hotel, where they scoop out any remnants left at the bottom of the tins.

The deer become so tame that it is no un-common sight to see them wandering through the streets of Jasper. Many stories are told of their intelligence. For instance, the west-bound afternoon train leaves Jasper about half an hour before the east-bound train. The deer take no notice of the first train; but as soon as the clang-ing bell announces the departure of the second train, they come flocking down to the station, because they have learnt that, as this is the last train of the day, the waste food will be thrown out from the refreshment room as soon as the train has left.

Interesting, too, are the beavers. In the late evening it is sometimes possible to see them fell-ing trees alongside the streams, or swimming and diving in the water. Moose and mountain sheep usually keep their distance: moose being most often found feeding in the marshes, while mountain sheep, or bighorns, can sometimes be seen scaling almost vertical cliffs, or leaping from crag to crag, a feat they accomplish with the greatest ease.

When the white man first settled in America great herds of buffalo (bison) roamed over the trackless prairies of Canada and the United States. By now these splendid animals would have quite disappeared if they had not been preserved in the National Parks. We can watch them at Banff, where the great buffalo paddock runs alongside the Canadian Pacific Railway.

Equally famous is the Yellowstone National Park in the United States. Less than a century ago the only inhabitants of this area were Indians, who roamed among the mountains trapping animals and fishing in the rivers. To-day neither gun nor trap, gin nor snare, is allowed to be used, and the wild animals are quite undisturbed. Among the wonders of the Park are hot springs and GEYSERS (q.v. Vol. III), one of the most famous being Old Faithful, which once every 65 minutes sends a fountain of steam and hot water 100 feet or more into the air. Other marvels include trees that grew millions of years ago and have since been turned to stone. The Yellowstone River in its course through the Park has cut a canyon more than 1,000 feet deep. But even more remarkable is the Grand Canyon of the Colorado River, which the Government of the United States has set aside as a National Park (see COLORADO CANYON, Vol. III).

Australia has no National Parks comparable to those of South Africa, Canada, and the United States; but there are a number of Wild Life Sanctuaries. Among them is the Sir Colin McKenzie Sanctuary in Victoria. Here may be seen native animals, such as koalas or tree-bears, kangaroos with little 'joeys' peeping from their pouches, echidnas or spiny anteaters that are not unlike large hedgehogs, and platypuses—mammals which lay eggs like reptiles and have bills and webbed feet like ducks. There are crested cockatoos, parrots that seem to chatter inces-santly, lyre-birds, pelicans, black swans with bright red beaks, and bell birds which tinkle amongst the peppermint trees.

Separate accounts of all these animals can be found in Vol. II.

See also Vol. VI: FORESTRY COMMISSION.

NATIONAL TRUST. The National Trust exists to acquire and preserve places of historical interest and natural beauty in Great Britain and Northern Ireland. It was formed in 1895, and is a private, non-profit-making organization, differing in this way from the state-controlled bodies which exist for a similar purpose in other countries, such as France and America. The National Trust receives certain tax exemptions for maintaining its many buildings and estates, but it has never received a direct State grant or subsidy. When the Treasury accepts land instead of death duties, the land is sometimes handed over to the National Trust for administration, but with no money for its upkeep.

BODIAM CASTLE IN SUSSEX, ONE OF THE PROPERTIES OF THE
NATIONAL TRUST

The Trust carries on its work only by the revenue which comes from the subscriptions of its members, from individual donations, from bequests, or from public subscriptions. Ordinary membership costs 10s. a year, and carries with it such privileges as right of free entry into Trust properties. Those under the age of twenty-one can become Associates of the National Trust for 2s. 6d. a year, although this does not carry with it the same privileges as full membership.

The National Trust now holds more than 140,000 acres, comprising over 1,000 properties. Over another 40,000 acres it holds what are known as restrictive covenants, that is to say the property does not actually belong to the Trust, but the Trust guarantees that it will be preserved in its present state.

The properties held by the National Trust are widely scattered and of many different kinds. There are bird sanctuaries, such as the Farne Islands; there are places of archaeological interest, such as Hadrian's Wall in Northumberland, or the Druids' Circle in the Lake District; there are also many places of historical interest—famous country manors such as Montacute in Somerset, or Charlecote Park in Warwickshire, and interesting buildings such as the 17th-century George Inn in Southwark, which is mentioned by Dickens in *Little Dorrit*, and is the last remaining galleried inn in London. Amongst Trust properties there are also many places of natural beauty—little English villages, such as West Wycombe and Chiddingstone, large areas of land in the Lake District, and many miles of coastline in Pembrokeshire, Devon, and Cornwall.

NETBALL, *see* BASKETBALL.

OBOE, *see* WOOD-WIND INSTRUMENTS.

OCEAN RACING. Although commercial and naval sailing ships in their voyages about the oceans had raced against each other both formally and informally in the past—the famous wool races from Australia are a classic example—the first recorded ocean race for yachts did not take place until 1866. This was a challenge match between three American schooners, *Henrietta, Fleetwing,* and *Vesta,* which raced from New York to Cowes for a purse of $90,000. In 1870 a more famous transatlantic race took place between the British yacht *Cambria,* on her way to America to challenge for the AMERICA'S CUP (q.v.), and the American schooner *Dauntless. Dauntless* was soundly beaten in this race, as she was again in 1877, when her owner was challenged by the owner of *Coronet* to another transatlantic race, this time from New York to Cork. These three events, however, were hardly our modern idea of yacht races. Considerable cash prizes were involved and the boats were manned entirely by professionals, the owners usually spending their time ashore.

The first real ocean race, as we understand it to-day, was the Kaiser's Cup Race, between New York and the Lizard, in 1905. Eleven yachts competed for the much-advertised £1,000 gold cup presented by the Kaiser; but as the smallest of these was the 84-ton schooner *Fleur-de-lis,* and the largest the full-rigged ship *Valhalla,* of 648 tons, it will be seen that even this event was a matter of expensive yachts competing against each other rather than a test of courage and skill. The most famous ocean racers of modern times, *Dorade* and *Stormy Weather,* were both under 40-foot waterline length, and would seem like dinghies beside most of the entries for the 1905 race. This race is now principally remarkable for the two still unbroken records set up by the winner, *Atlantic,* who made the crossing in the amazing time of 12 days 4 hours, and in so doing also broke the record for a day's run by one magnificent sprint of 328 miles.

In the following year, 1906, the first of the famous New York to Bermuda races was held. These races were held regularly from that date to the outbreak of the First World War, and became a biennial event of such importance that the phrase 'Bermuda fever' was coined to describe the state of mind of all would-be ocean

racers. In the same period a series of races was also held between California and Honolulu. British yachts from time to time competed in the Bermuda races, but it was not until 1925, after the success of the first Fastnet Race, that the Royal Ocean Racing Club was founded to encourage the sport in British waters.

The Fastnet Race was first organized as a private venture by a few yachtsmen who wanted to raise British standards in this field in competition with the Americans; it has now become a regular event, held annually until 1933, and since then biennially. The course, 615 miles long, runs from Cowes eastward round the Isle of Wight, westward round the Fastnet Rock off the coast of Ireland, and back to Plymouth. It is a long course and not infrequently attended with rough weather in the unsettled conditions of August when the race is held; but though there have been accidents, no ship has yet been lost. The race has become so popular that in recent years many Americans have sailed across the Atlantic to compete in it, often successfully.

Two main points give ocean racing its great superiority over class racing; first, a man can use his normal cruiser, provided that it is reasonably fast for its waterline length; whereas it is impossible to achieve any success in the International racing classes without specially built boats. Secondly, in ocean racing the crew are almost entirely amateur. The ocean racing calendar, unlike the match regattas, which take place almost continually throughout the season, is specially arranged to fit in with a working man's leisure. The shorter races are held at week-ends, and the longer during the months of July and August when most people can arrange to take their holidays, and owners are therefore usually able to rely on amateur crews.

Ocean racers carry very much larger crews than the same boats would need for cruising, because if a ship is to be driven really hard, constant sail-changing is necessary, and proper watches must be kept. It has been said that even the smallest craft needs a crew of five men to keep it sailing hard; the larger boats may require as many as sixteen. The sport thus provides ample opportunity for those who cannot afford a boat of their own to get some experience of deep-sea sailing. There is, in fact, such a demand for good amateur crews that a keen yachtsman who joins any of the better known clubs (with the exception of the Royal Ocean Racing Club,

which he cannot join until he has actually finished in a race) should have little difficulty in getting all the crewing he wants. The Little Ship Club is probably the best for this purpose, as it runs a special crewing scheme to provide owners with crews and crews with ships.

Every kind of ship, from old-fashioned gaff cutters to Bermuda-rigged racers, has taken part in ocean racing; one of the most successful of them all, *Jolie Brise*, was an old Havre pilot cutter. But as a sailing-boat's maximum speed is governed largely by her waterline length, the bigger ships would have it all their own way unless there were some form of handicap. The Royal Ocean Racing Club has devised a system of handicapping which has been found to work so well that it has been adopted by French, Dutch, and many of the Baltic Clubs. Each boat in the race is given a time allowance, based upon the fact that, roughly speaking, length and sail area increase speed, and beam and draught decrease it. In America, where interest in the sport is even greater than in Britain, it has become customary for yachts, built for ocean racing, to be designed expressly to take maximum advantage of the rating rule, and such boats obviously stand a better chance than ones built solely for cruising.

The R.O.R.C. in 1938 decided to split their events into three classes. These are: (1) the open class for the larger ships; (2) the 'A' or fast cruiser class; (3) the 'B' class, consisting of the ordinary cruisers not designed for the rule. The rating handicap is still used, and since luck plays a considerable part in any race held over a long, open sea course, it does sometimes happen that the slower boats win—and in fact in one of the 1938 races a 'B' class cruiser, *Aideen*, by means of her time allowance, defeated the whole fleet.

Although transatlantic races are held from time to time, the principal ocean racing events for British yachtsmen are the Fastnet Race (615 miles), the Heligoland Race (from Burnham on Crouch to Heligoland, 310 miles), and the Dover to Christiansand Race (488 miles). The R.O.R.C. also organizes a number of special races each year, and there are many smaller fixtures, such as the Thames Estuary Race (100 miles) organized by the Royal Corinthian Yacht Club, and the Little Ship Club Brightlingsea to Ostend race, which is interesting as being the only remaining race in which the traditional start from at anchor, with all sails furled, is used.
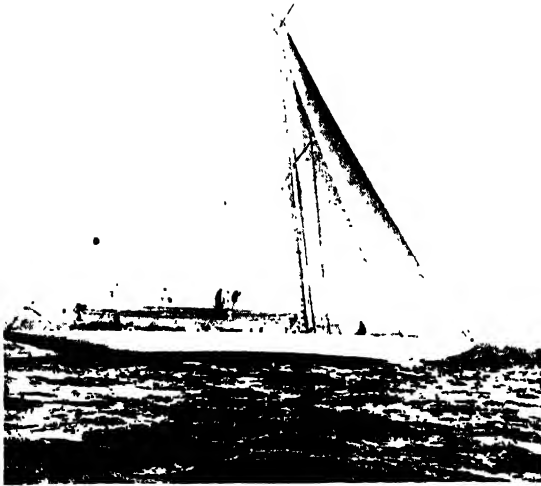
THE 'ENTERPRISE'

This ocean-racing yacht, owned by W. Vanderbilt, competed in the America's Cup (1930), the Bermuda Race, and others. *New York Times*

There are a number of challenge cups for the best performance throughout the year in the various classes, such as the Trenchemer Cup for the open class, the Ortac Cup for the 'A' class, and the Aralus Plate for the 'B' class. A yearly championship prize is also offered for the club winning the most points during the year; in the 1938 championship forty-two clubs entered.

Entries for the R.O.R.C. and other events are not confined to British yachts, and the fine sportsmanship which has been shown by the crews of American and other foreign yachts is in strong contrast to the rather gloomy record of the America's Cup races. The fact that in the past the American entries have been faster, ship for ship, than our own has acted as a strong stimulus to British designers, owners, and crews, and ocean racing now shows every sign of becoming the most popular feature in international yachting.

See also SAILING; YACHT RACING; DINGHY RACING; AMERICA'S CUP.

OLYMPIC GAMES. In ancient Greece ATHLETICS (q.v.) played a very important part in the lives of the people, and athletic festivals had an almost religious character. There were four especially important athletic festivals in different parts of Greece—the Isthmian, the Nemean, the Pythian, and the Olympian—and all of these took place near sacred places and were conducted with all the ceremony of a religious festival. In course of time the Olympian meeting, held every four years in honour of Zeus, won a reputation far greater than the others, and, gradually losing its local character, it became a national event. No one knows how far back the Olympic Games go; but official Olympic records were kept from 776 B.C., and when in the 3rd century B.C. the practice of reckoning time by the Olympiads was begun, the calculation was made from that date. The year A.D. 1, for instance, corresponded to the last half of the 4th year of the 194th, and the 1st half of the 1st year of the 195th Olympiad.

The Plain of Olympia lies in a valley in the Peloponnesus, through which ran the sacred river Alpheus. On the athletic ground were temples and altars, as well as altogether about 3,000 statues and monuments. The games took place on the first full moon of the summer solstice before crowds of many thousands of spectators drawn from all parts of the Greek world. No woman, however, was allowed even as a spectator at the Olympic Games. Competitors underwent extensive training—in many cases a 10-month training at the Gymnasium at Elis.

The games lasted for five days. The first day was spent in religious RITUAL (q.v. Vol. I) in preparation for the contests—processions, sacrifices, and other rites. The contests of the trumpeters generally took place in the afternoon. On the second day the events for boys took place --foot-racing, wrestling, boxing, horse-racing, pentathlon (a special contest proving the athlete's ability in five different exercises - jumping, running, discus and javelin throwing, and wrestling), and pankration (a contest combining boxing and wrestling). On the third day took place the men's jumping, wrestling, and running contests, including a 200 yards' sprint, a 400 yards' race, a long distance race of nearly 3 miles, and the 'hoplites' race', or race in heavy armour. On the fourth day were the men's pentathlon, and the CHARIOT RACING (q.v.) and horse racing. The fifth and last day was devoted to further processions and sacrifices, and to the garlanding of the victors with garlands of wild olive from
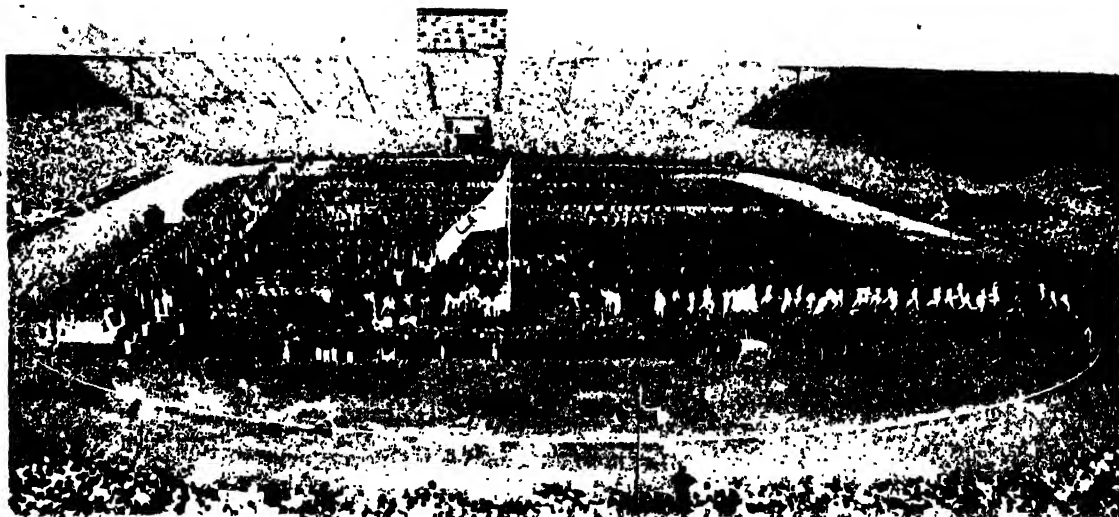
THE OLYMPIC FLAME ARRIVING AT WEMBLEY STADIUM, LONDON, FOR THE START OF THE OLYMPIC GAMES, 29TH JULY 1948
Six thousand competitors are grouped in the centre, as the runner makes a circuit of the arena carrying the torch
Olympic Photo Association

the sacred grove of Altis. Each victor, thus garlanded and carrying a palm branch, was presented to the people, while a herald announced his name and country. So great was their honour that the winner of the foot-race even gave his name to the year of his victory. Although the Olympic winners received no money prize, they were, in fact, very richly rewarded by their State authorities. How the standard of athletic achievement compared with modern standards we have, unfortunately, no means of telling; but we do know that, in spite of intensive training, runners were known to fall dead from strain at the winning post.

The Games were at first purely a Greek affair; but later other nations, especially the Romans, took part, and for a time they took on the aspect of European championships. Eventually, after an uninterrupted history of almost 1,200 years, the Games were abolished in A.D. 394 by the Christian Emperor Theodosius, because of their pagan origin. For the next 1,500 years there was no great international athletic tournament.

In the 19th century the renaissance of athletics as a public spectacle soon produced a demand for an international championship meeting, and it was decided to revive the institution of the old Greek Games. The new Games were also called Olympics, and were arranged to take place

every four years. As a tribute to Greece, the first meeting in 1896 was held in Athens. The performances at this first meeting were mediocre, many countries, particularly Britain, being poorly represented; but the idea of such an international meeting soon gripped the world's imagination, and nations subsequently considered it a point of honour to send their best athletes to the Olympic Games. The modern Games are, in fact, only in name a revival of the Greek Games; they are great international meetings of modern athletics.

The Games are held in different countries in turn, the host being chosen by the international Olympic Committee. The host bears the cost of presenting them, but competing nations pay their own athletes' expenses. Athletic track and field contests are the main feature of the meetings; but before the Second World War contests in other sports had been growing in number until now almost all forms of sports are represented. The ancient pentathlon has been supplanted by the decathlon, which tests a man's all-round ability in ten instead of five athletic exercises. The majority of events take place at the chosen meeting ground—in 1948, for instance, at Wembley Stadium; but others, such as winter sports competitions, take place in different places throughout the Olympic year. Women athletes first competed at the Olympic Games in 1922,

and the programme of thirty-two athletic events now includes nine for women.

The modern Olympic Games meeting starts with the arrival at the sports ground of a runner carrying a lighted torch, which has been brought overland by a relay of runners from the plains of Olympus. This torch symbolizes the continuation of the Greek athletic ideal with modern games, and is a tribute to the indomitable spirit of the ancient heroes. It continues to burn throughout the meeting as a sign that peace will be kept through the Olympic Year. The Olympic flag carries the symbolic five intertwined rings showing the uniting of the five continents linked in a common concern.

See also ATHLETICS; ATHLETICS, FIELD EVENTS; ATH-
LETICS, TRACK EVENTS; WRESTLING.

See also Vol. I: GREEK CIVILIZATION.

OPERA is a play enacted to music by singers performing singly or in chorus. In 'grand opera' everything is usually sung, though a few composers of grand opera, for example, Mozart in *The Magic Flute* and Beethoven in *Fidelio*, used speaking lines between their musical numbers. Opera with spoken dialogue as well as singing is normally called 'opéra comique', even though the story itself may be tragic, as in Bizet's *Carmen*. Composers of opera have always had to contend with two points of view: the librettists (writers of the story) and serious opera lovers demand that the music, words, and action should so blend together that the opera is built up into an artistic and dramatic whole; whereas the singers and, indeed, a large part of the audience, are more interested in the songs and 'tunes' which, if over-emphasized, may hold up the action of the plot.

The earliest operas were written about 1600 in Italy, especially in Florence, the *Eurydice* by Peri being generally considered the first. These operas had no songs; and what we call dialogue was simply sung to an accompaniment of little more than supporting chords. This came to be called 'recitative' (recitation). Later, composers such as Monteverdi wrote 'arias' (short little songs or melodies) to relieve the monotony of the recitative. In time the arias became longer and more elaborate, and to save time the recitative was composed so that it could be sung very quickly to harpsichord accompaniment, its purpose being to explain the plot to the audience, without any attempt to make it dramatically

expressive: this was called 'recitativo secco'. But, as this tended to be tedious, composers began to use the orchestra to accompany the recitative so that more poignant emotions could be expressed, using 'recitativo secco' only for the more ordinary matters of the story. One of the great reformers was Gluck (1714–87), whose *Orpheus* is the earliest opera which is still regularly performed. Gradually all the recitative was accompanied by the orchestra, until, by the middle of the 19th century, it was difficult to know which was the aria, and which the recitative. The more recent operas of Verdi, Puccini, and Wagner have neither the dialogue nor 'recitativo secco'. A modern English composer, Benjamin Britten, has reverted to the old way of accompanying recitative in two of his operas, *The Rape of Lucretia* and *Albert Herring*.

The methods of designing the scenery and producing an opera are much the same as with an ordinary play (*see* PLAY PRODUCTION and STAGE DESIGN). Though the composer will have written instructions on his score about the main dramatic entries and exits of the singers, their movements on the stage are decided, as in a play, by the producer, in consultation with the conductor who, during an actual performance, directs the singers on the stage as well as the orchestra. The presentation of the opera varies with different productions: every opera house presents new interpretations of standard favourites from time to time, and fashion changes. At one time, for instance, lovers always wore moustaches and probably beards, but recently most operatic tenor lovers are clean-shaven, beards being left to basses and baritones.

The operas composed more than 100 years ago usually begin with an overture, played by the orchestra when the lights in the theatre have gone down. This is a piece of music intended by the composer to set the general mood of the opera, as in *Carmen*; or it may sometimes be a medley of some of the best tunes, as in *The Force of Destiny*. Sometimes these tunes are also arranged in a sequence telling the story of the opera without words, as in *Tannhäuser*. The overture may have an exciting finish which the audience applauds, or it may lead straight on into the opera. Modern operas, however, seldom have overtures. When the scenery has to be changed during an act, the orchestra will probably play a piece of music called an 'intermezzo'. This may try to depict musically what

A SCENE FROM 'THE BEGGAR'S OPERA'

Painting by W. Hogarth (1697-1764). *The Beggar's Opera* was written by John Gay in 1728. It was the first of a series of 'ballad operas' in which the music was based on popular tunes.
Tate Gallery

is happening to the characters between the curtain's going down and rising again—for example, Siegfried's Journey to the Rhine in *Götterdämmerung*; it may be again in the general mood of the opera, as in *Cavalleria Rusticana*; or sometimes it is one of the most popular tunes that the audience might like to hear again, such as the *Barcarolle* from *The Tales of Hoffmann*.

In operas in which the dialogue is spoken or sung with harpsichord accompaniment only, the rest of the music consists of the following: arias in which a single singer expresses his feelings —perhaps of joy, sadness, or rage; duets in which two characters sing to each other, either both expressing the same emotion such as love, or expressing different opinions as in a quarrel, perhaps one threatening the other who is afraid; trios in which three singers all express the same

or different emotions: for example, two men may be expressing their love to one woman, or an irate father may be scolding a pair of lovers; quartets with four singers; quintets, sextets, septets, or octets, consisting of five, six, seven, or eight singers respectively. If the scene occurs in a public place where other people might be expected to be, such as a large hall, a banquet or a market-place, then any of these combinations may be supported by a 'chorus', that is to say, a group of singers, from twelve to eighty in number, who may be men or women, or both (sopranos, contraltos or mezzo-sopranos, tenors, basses in about equal proportions). As before they may all express the same emotion or be divided into different groups. For example, in the Kermesse Scene in *Faust* the first sopranos are young girls, the mezzo-sopranos married

women, the first tenors old men, the second tenors young men, the first basses drinkers at a tavern, the second basses soldiers.

One of the unique conventions of opera is that it is possible for several singers all to sing at once without the result being gibberish as it would be if they all talked at once in a play; and providing the composer has done his work well, we can quite easily realize, partly by hearing, and partly by seeing, what everybody is thinking about.

In the more modern operas of Verdi, Wagner, Puccini, and their successors, where there is neither dialogue nor recitativo secco, the dramatic high-lights usually still fall naturally as before into the form of aria, duet, trio, and so on, though then beginnings and endings are not clear-cut, but flow almost imperceptibly into the dramatic low-lights of narrative.

The heroine of the opera is usually played by a soprano (though Carmen and Delilah in *Samson and Delilah* are exceptions to this); and the hero in most modern operas is a tenor, and in most classical operas a baritone. It is a tradition that young women's parts are given to sopranos and older women's parts to mezzo-sopranos and contraltos. Boys up to the age of eighteen are played by mezzo-sopranos. All the other men's parts are played by character tenors and basses. All the singers are limited, or should be, to certain kinds of role which composers have in mind when writing their operas.

Many people are discouraged in watching operas because the singers, in particular the heroines, so often have not the right kind of appearance for the part they are taking. In a play and on the films the producer will engage actors and actresses because, besides being good actors, they look the part. But the opera producer has much less choice; singing voices develop late, and very few men and women have voices good enough for the principal roles until long after they are at the age of the character they are representing: for example, Madam Butterfly says she is fifteen, Juliet even younger, Gretel younger still, and most operatic heroines are supposed to be under twenty-one. Some of the exceptions are Tosca, Lady Macbeth, the Countess in *The Marriage of Figaro*, and Leonora in *Fidelio*. Contraltos and basses are luckier, for they often have to make themselves appear much older than they really are. Also, singing is quite a violent form of physical exercise which tends to develop muscles and, too often, fat; so that the

kind of slimness we admire on the stage rarely goes with the kind of voice that is required for operas by Wagner and Verdi. The appearance of the characters in the opera must therefore be accepted as an operatic convention, necessary if Opera, as we understand it, is to be possible at all.

See also SINGING.

See also Vol. XII: OPERA, HISTORY OF.

ORCHESTRA. The word 'orchestra' originally meant the semicircular space in front of the ancient Greek stage. Now it means a group of instrumental players. Instruments were probably combined together from earliest times: the Egyptians, for example, used orchestras which included harps, lutes, and lyres, (*see* MUSICAL INSTRUMENTS, HISTORY OF). It was not, however, until the 17th century that a logically planned system of grouping instruments began to be developed. One of the earliest experimenters was Monteverdi (1567–1643), who gathered together a force of forty players to perform his opera *Orpheus*. Even here, however, there was no attempt at an ordered assembly, and Monteverdi merely collected instrumentalists who happened to be in the service of his patron, all musicians being at that time under the patronage of kings and noblemen.

Up to the time of Haydn and Mozart, in the middle of the 18th century, the harpsichord (*see* KEYBOARD INSTRUMENTS) was used as the foundation for most orchestral playing; and Bach and Handel wrote a great deal of their instrumental music with the harpsichord or ORGAN (q.v.) as accompaniment. During this period members of the violin family were gradually displacing the viols. A typical orchestra of this period might be as follows: 4 first violins, 4 second violins, 2 violas, 2 cellos, 1 double bass, 2 flutes, 6 oboes, 3 trumpets, 1 harpsichord. The harpsichordist frequently played from a part having a single bass line, to which figures were added to indicate the harmony to be used.

Haydn, Mozart, and Beethoven wrote with a much clearer understanding of the possibilities of the instruments, and made much greater use of the differences in orchestral colour. The number of oboes was reduced to two, and the horns became regular members of the orchestra. Mozart also made use of the clarinet and introduced the trombones into some of his later work.

The orchestral works of Beethoven finally fixed the orchestra at what might still be regarded

as its minimum standard composition. In the overture, *Leonora No. 3*, he employs the following instruments:

Strings: first violins, second violins, violas, cellos, double bass.

Wood-wind: 2 flutes, 2 oboes, 2 clarinets, 2 bassoons, 4 horns.

Brass: 2 trumpets, 3 trombones.

Percussion: 1 kettledrum (timpano).

Later composers considerably increased both the size and scope of the orchestra, but in the main the composition as employed by Beethoven still remains the basis of the orchestra. The modern symphony orchestra varies from 20 to 120 players. Few British orchestras have more than eighty, although they can be increased for special occasions. Wagner, for example, demands treble wood-wind, eight horns, five trumpets; and William Walton, in his *Belshazzar's Feast*, uses almost every accepted musical instrument and, in addition, two brass bands.

The instruments of the orchestra are usually classified into STRING, WOOD-WIND, BRASS, and PERCUSSION INSTRUMENTS (qq.v.). The horns, in quality of tone, are more closely allied to the wood-wind than to the brass, and they form a link between these two sections. In all sections except the strings there is a working minimum number of players which must be observed, as most standard orchestral scores have an individual part for each of these players; this working minimum is as follows:

Wood-wind, 8 players: 2 flutes, 2 oboes, 2 clarinets, 2 bassoons.

Horns, 4 players.

Brass, 6 players: 2 trumpets, 3 trombones, 1 tuba.

Percussion, 3 players: 1 kettledrummer, 2 others.

Harp, 1 player. Total 22 players.

If the orchestra strength numbers sixty players, the remaining thirty-eight players would be strings, their exact division depending upon the conductor. The following might be taken as providing a reasonable balance: first violins, 12 players; second violins, 10 players; violas, 6 players; 'cellos, 6 players; double bass, 4 players.

The principal violinist is responsible for leading the orchestra; he not only assists the conductor in points of technique connected with the strings, for example marking the bowing and fingering, but also acts as the connecting link
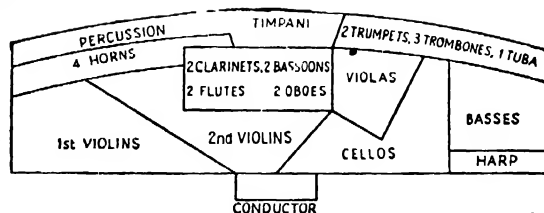
SEATING PLAN OF AN ORCHESTRA

between the conductor and the rest of the players.

There is no generally accepted plan for seating the players, and each orchestra makes its own arrangements; a visiting conductor will usually make only minor adjustments to this accepted seating, for it is disturbing to the players to be moved from positions to which they are accustomed. The diagram shows the seating plan of a well-known orchestra, but such an arrangement is not, of course, universal.

See also CONDUCTING; MUSICAL INSTRUMENTS.

ORGAN. The origin of the organ cannot be stated definitely. Its resemblance to Pan's pipes is clear; these consisted of sets of reeds of graduated lengths blown by the mouth (*see* MUSICAL INSTRUMENTS, HISTORY OF). Both the Egyptians and the Romans are credited with having constructed huge organs; but the authenticated history of the organ probably dates back only to the 10th century, when small but quite refined instruments were beginning to be installed in cathedrals and large churches for the accompaniment of choirs and for solo purposes.

Organ tones are produced by the vibrations of air in pipes, which vary in length from 16 feet (exceptionally 32 feet or even 64 feet) to a fraction of an inch; and a large organ may contain several thousand pipes. The pipes are grouped into 'ranks' according to their qualities of tone, each rank comprising a series of pipes corresponding to the notes of the keyboard. Thus we may have ranks of string tone, flute tone, trumpet tone, and so on. The organ, therefore, resembles the ORCHESTRA (q.v.) in possessing a variety of 'tone colours'. The tones are controlled by the organist from a 'console', consisting of one or more keyboards called 'manuals' or 'claviers', each with a compass of five octaves (bottom note C); a pedal board with a compass of 2½ octaves (bottom note C); a number of 'draw stops' or 'tilting tablets' for bringing into use individual ranks; and 'pistons', operated by

hands or feet to bring into action several ranks at one time. There are also 'couplers' which enable the organist to combine manuals and pedals, or to use pipes of the same rank at different pitches; and 'expression pedals', which enable the player to obtain crescendo and diminuendo effects by opening or closing boxes containing ranks of pipes.

There are two distinct kinds of pipes, 'flues' and 'reeds'. The flues have a wood or metal obstruction called the 'languid' inside the foot of the pipe, so that the air coming from the bellows impinges on a sharp edge which is the upper 'lip' of an opening called the 'mouth' of the pipe. The turbulence thus produced in the air stream sets up vibrations of the air column in the pipe, which emits a note of pitch corresponding to the length of the pipe. The quality of tone produced is determined partly by the shape and cross-section of the air column, and by the wind-pressure which, for stops of medium power, is sufficient to support a column of water $3\frac{1}{2}$ to 6 inches high in a water gauge, and as much as 100 inches for very powerful reeds. In its more refined characteristics, the quality depends on the skill and artistry of the organ builder, who, by delicate adjustments made to the mouth and the languid, is said

Flue Stop   Reed Stop
ORGAN PIPES

to 'voice' the instrument. While much of the voicing is done in the organ works, the final finishing is left till the instrument is installed.

Reed pipes are so named from the small tongue of brass, called a reed, situated in the 'boot' of the pipe, which is set in to-and-fro motion by the air stream from the bellows. The tone from the vibration of the reed is reinforced by the resonant vibration of the column of air in the pipe which stands over the boot. It will be seen that the function of the air column in flues and reeds is different; in the former the air column is the actual source of the tone, while in the latter it is an 'amplifier' of the notes produced by the reed. Organists recognize two

main types of reed tone; chorus reeds or considerable power, such as the trumpet or tuba; and imitative reeds, such as the oboe, clarinet, or bassoon, each more or less resembling these orchestral instruments.

The characteristic tone of the organ is that of the 'diapason', produced by open pipes of considerable diameter, and the first stops to be selected for any organ are the diapasons of various pitches and power. The normal pitch of the organ is the same as that of the pianoforte, and is referred to as 'unison' pitch or '8-foot pitch', because the 'speaking length' of the column of air of the bottom note of the manuals is about 8 feet, its vibration frequency being about 64 vibrations per second. Now it is an important acoustical fact that the quality of tone of any note is due to a fundamental note together with a series of 'overtones' or 'harmonics', which in an open pipe of large scale are twice, three times, &c., the frequency of the fundamental (see MUSICAL INSTRUMENTS). If any alteration be made in the harmonic series, then the quality of the tone will be altered accordingly; and as brilliance of tone depends on the strong development of the higher harmonics, it is possible, by using ranks of 4-foot pitch, 2-foot pitch, and so on, to increase the general tonal effect of an organ. Similarly, considerable 'body' can be given to the tone by the use of 16-foot stops. A complete specification will, therefore, include diapason ranks of 16-foot pitches, 8 foot, 4 foot, $2\frac{2}{3}$ foot, 2 foot, and so on.

The organ manuals include 'great', 'swell', 'choir', 'solo', and 'echo'. The 'great' is so-called because it contains the most powerful body of diapason tone. Chorus reed (trumpet) tone dominates the 'swell', which is so-called because the pipes are enclosed in a box with sides fitted with shutters, like the shades of a Venetian blind, capable of being opened or closed at will by the operation of an expression pedal on the console. The 'choir' is usually an 'enclosed' manual for accompaniment, though ideally it would be a miniature great. The 'solo' consists predominantly of stops, often very powerful, such as the tubas, designed specially for solo effects. In the average 3-manual church organ, the manuals would be choir (bottom), great (middle), and swell (top).

When the organist depresses a manual key, no sound will be heard till a stop belonging to that manual is drawn, and causes a rank of
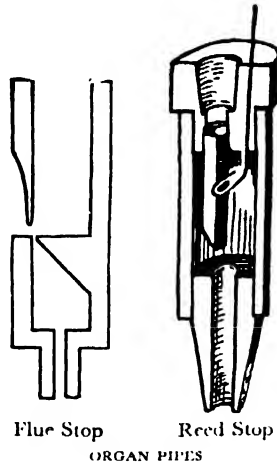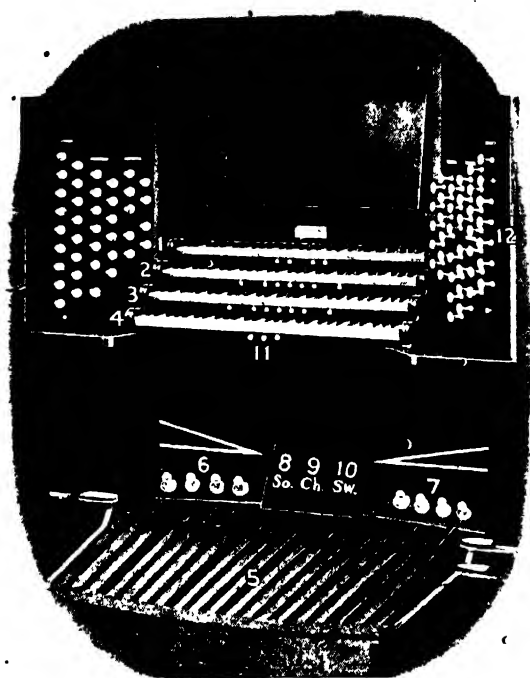
THE CONSOLE OF THE ORGAN

1. Solo Manual; 2. Swell Manual; 3. Great Manual; 4. Choir Manual; 5. Pedal Board; 6 and 7. Toe Pistons; 8, 9, and 10. Swell Pedals; 11. Thumb Pistons; 12. Draw Stops. *R. Spurden-Rutt & Co.*

pipes to be brought into operation. Stops may be drawn on all manuals and on the pedals. The manuals may be coupled so as to be played from one keyboard only, and they may be coupled to the pedals. By drawing distinctive stops on two different manuals and pedals, it is possible to play a trio. The range of power of the instrument is greater than that of any other instrument, from tones scarcely audible to those needed to fill the largest auditorium. In some organs, particularly those in cinemas, percussion instruments such as the glockenspiel, vibraphone, and drums are included in the specification, and many novel effects can be obtained.

The following is a typical specification of a 3-manual organ of moderate size, showing the pitch and the approximate power of the stops:

Great

Double diapason.	.	.	.	.	.	16 ft. *mf*
Open diapason. No. 1					.	8 ft. *f*
Open diapason. No. 2					.	8 ft. *mf*
Dulciana .	.	.			.	8 ft. *pp*
Claribel Flute		.	.	.	.	8 ft. *p*
Principal .	.	.		.	.	4 ft. *f*

Flute	.	.	.	.	.	4 ft. *p*
Twelfth	.	.	.	.	.	2⅔ ft. *mf*
Fifteenth	.	.	.	.	.	2 ft. *mf*
Tromba	.	.	.	.	.	8 ft. *ff*

Choir

Salicional .	.	.	.	.	.	8 ft. *p*
Gamba	.	.		.	.	8 ft. *p*
Celeste	.	.		.	.	8 ft. *p*
Rohr Flute	.		.	.	.	8 ft. *p*
Harmonic Flute .		.	.	.	.	4 ft. *p*
Piccolo	.	.	.	.	.	2 ft. *p*
Orchestral Oboe		.	.	.	.	8 ft. *mf*
Clarinet .	.	.	.	.	.	8 ft. *mf*

Swell

Open diapason	.	.	.	.	.	8 ft. *mf*
Lieblich Gedeckt		.	.	.	.	8 ft. *p*
Gamba	.	.	.	.	.	8 ft. *p*
Voix Celestes	.	.	.	.	.	8 ft. *pp*
Gemshorn .	.	.	.	.	.	4 ft. *mf*
Octave Flute	.	.	.	.	.	4 ft. *p*
Oboe	.	.	.	.	.	8 ft. *mf*
Double Trumpet		.	.	.	.	16 ft. *f*
Trumpet .	.	.	.	.	.	8 ft. *f*
Clarion .	.	.	.	.	.	4 ft. *f*
Mixture .	.	.	.	.	.	3 ranks *f*

Pedal

Double diapason	.	.	.	.	.	16 ft. *f*
Bourdon .	.	.	.	.	.	16 ft. *p*
Bass Flute .	.	.	.	.	.	8 ft. *p*
Octave .	.	.	.	.	.	8 ft. *f*
Trombone .	.	.	.	.	.	16 ft. *f*
Trumpet .	.	.	.	.	.	8 ft. *f*

Couplers

Swell to Great	Swell Sub Octave
Swell to Choir	Great to Pedal
Swell Octave	Swell to Pedal
Choir to Pedal	

See also KEYBOARD INSTRUMENTS; MUSICAL INSTRUMENTS.

OTTER-HUNTING

OTTER-HUNTING. Many British rivers and lakes are inhabited by otters, which prey upon the stocks of trout and salmon. As it is very difficult to trap or shoot otters, they are hunted by packs of hounds kept specially for the purpose. In former days a special breed of rough-coated hound, possibly descended from bloodhounds, and certainly of very old lineage, was kept for hunting the otter; but nowadays it is more usual for hounds of the foxhound type to be used. Indeed, few packs breed hounds, but rely on 'drafts' or cast-offs from foxhound kennels. Many people get an interesting and inexpensive amusement by following them on foot. As with all forms of hunting, anyone who wishes to understand the system of hunting the otter must

know something of the animal's natural history and habits (see OTTER, Vol. II).

Since otters for the most part breed in winter, otter-hunting is carried on in summer and early autumn. Hounds do not draw for an otter in the same way as do fox or hare hounds, but find it by means of its 'drag', or the trail of scent which it leaves when returning to its 'holt' or hole in the early morning, after its nightly forage for food. The scent of an otter lasts much longer than that of a hare or fox, and can be followed when it is as much as 12 hours old.

When they move off from the meet, the otter-hounds are taken to the banks of some likely river, stream, or lake. As soon as they hit the drag of an otter, they slowly hunt along it until they reach the holt in which the otter is lying asleep. This holt may be anything from 100 yards to 6 or 7 miles from the point where the drag was first picked up by the pack. It may be in a rabbit-hole, a drain, or among the roots of a tree. It may be on the edge of the water, or even as much as a mile from it. Wherever it is, the otter must be evicted, or 'turned down', and this is done with the help of game terriers who go into the holt and, even though the otter is much bigger and stronger than they are, they

succeed in forcing it out. The otter at once tries to make its way towards some other holt where it hopes to gain refuge before the hounds can overtake it. It may swim in, or even under, the water for some distance, or it may travel at a surprisingly fast pace over land. In the water the hounds can seldom gain appreciably on it, and so they try to force it to take to the land.

Otter-hunting is one of the most skilled and interesting of all forms of hunting, indeed, it is worth while before going out with otter-hounds to learn something of the method of hunting. The hunt is organized in much the same way as a fox or hare hunt. But since only rivers and lakes are of interest to the otter hunter, one pack of otter-hounds will cover a much larger area of country than a pack of foxhounds. In fact, there are only about a score of packs in Great Britain, and yet few parts of the country are never visited by otter-hounds.
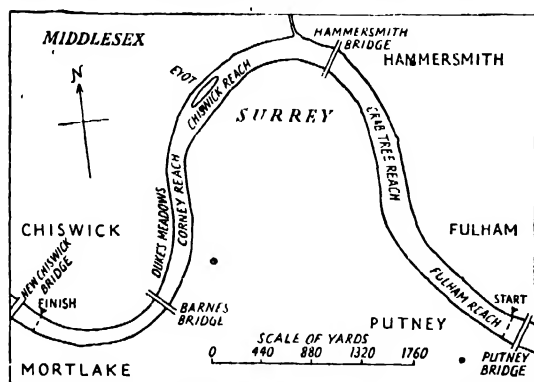
See also HUNTING, HISTORY OF; FOX-HUNTING; HARE-HUNTING

OXFORD & CAMBRIDGE BOAT RACE.
The first Oxford and Cambridge boat race took place at Henley on 10 June 1829. Oxford, the victors, wore dark blue striped jerseys, and Cam-

THE HAWKSTONE OTTER-HOUND PACK COMING THROUGH THE RIVER SEVERN AT LLANDINAM, WALES
W. W. Rouch & Co.

THE BOAT-RACE COURSE

bridge wore pink sashes. It is said that just as the crews were embarking for this race, a Cambridge man, noticing that Oxford sported a dark blue flag, ran across the road, bought a piece of Eton light blue ribbon, and fixed it in the bows of the Cambridge boat for luck. The following year Cambridge adopted light blue as their permanent colour. The two universities did not race again until 1835, chiefly because they were not able to agree on a suitable course. These early years were troubled by disputes about the employment of professional coaches and coxswains. Sharp practices and deliberate fouling were all considered part of the game, and eventually became so common that the professionals were dropped, and the Boat Race has been a rigidly amateur contest ever since.

The present course from Putney to Mortlake is a little under 4¼ miles long. It was first used in 1845, and has been used ever since except for three occasions when the race was rowed on the ebb tide from Mortlake to Putney, and during the war years 1915–19 and 1940–5. In ordinary weather conditions it is very fair to both crews, despite its twists and turns. The first bend, going up to Hammersmith, and the last bend, after Barnes Bridge, are in favour of the crew having the Middlesex station, while the big loop from Hammersmith Bridge to the top of Chiswick Eyot gives compensating advantages to the boat rowing on the Surrey side (see map). Even experts disagree as to which is the best station in normal conditions. If one boat gets sufficiently far ahead, it can cross over and take its rival's water; but it does so entirely at its own risk, as to be touched in that position would constitute a foul.

Nowadays the race is rowed on a Saturday at the end of March or beginning of April. Training begins at Oxford and Cambridge at the start of the Hilary Term in mid-January; the last fortnight of practice takes place on the tideway at Putney; the race is timed to take place on the flood tide, but the strength of the tide, naturally varies a good deal according to the weather conditions. Sometimes the water has been so rough that one of the boats has sunk; in 1912 both sank, and the umpire declared the race invalid as the crews had left their boats, and ordered a re-row. In the early days the race was often hampered by the presence of other craft on the river; but since 1865 the Port of London Authority has been empowered to close this part of the river to other traffic at the time of the Boat Race. Various launches are permitted to follow the racing crews; in one of them is the umpire, appointed by the joint Boat Clubs to ensure fair play. He starts the race from a craft called a 'stake-boat' moored in the fairway.

The type of boat used has developed a good deal. Oxford's first boat, used in 1829, is still preserved in the University boathouse at Oxford; it is deeper, shorter, over twice as broad, and nearly three times as heavy as a modern boat. Outriggers were introduced in 1846 to give the oarsmen increased leverage and to enable lighter and faster boats to be built. The first keelless boats were introduced in 1857, and sliding seats came in in 1873.

Except during the war years, the series of races has continued uninterrupted since 1856. Cambridge had until 1949 won fifty-one times and Oxford forty-three. The only dead heat occurred in 1877. The record of 17 min. 50 sec. was made by the Cambridge crew of 1948, and it was made in spite of a 'crab' caught in the first few seconds. The heaviest man ever to take part in the Boat Race was Toogood, who weighed 14 st. 10 lb. and rowed for Oxford in the first race in 1829. The lightest was H. R. V. Massey, Oxford's cox in 1939, who tipped the scale at 5 st. 1 lb.

The Boat Race is now one of the most famous sporting events in the national calendar. Each year it is attended by enormous crowds of people; the B.B.C. broadcast a running commentary of it; and in 1949 for the first time it was televised.

See also BOAT-RACES: ROWING.

P

PAGEANT. The origin and early history of this word is obscure. It seems to have derived from the Latin *pagina*, 'a page,' and thence to have come to mean a scene or part from a play. In this sense it is used in medieval times in connexion with MIRACLE or MORALITY PLAYS (qq.v. Vol. XII), and from this it came to mean the wagon on which the scene was performed, and on which it moved from place to place in the days before there were permanent theatres (*see* THEATRE, HISTORY OF). Archdeacon Rogers, describing the Chester plays at the end of the 16th century, says: "The maner of these plays weare, every company had his pagiant, or parte, which pageants weare a high scafolde with two

rowmes, a higher and a lower, upon 4 wheels.'

From this the word has come to mean a brilliant show or spectacle arranged out of doors, generally involving large numbers of people, and in modern times normally made to represent some famous historical occasion connected with the place in which it is held. It often takes the form of a number of scenes, accompanied by appropriate dialogue, music, and dancing, everything possible being done by skilful setting and the use of bright costumes to add to the spectacular effect. Among the most successful pageants of this type in England in recent years have been those at Runnymede, at Abinger (for which Vaughan Williams composed the music), at Winchester (against the ruins of Wolvesey Palace), Guildford, and Norfolk. Alternatively, pageants may take the form of processions; the most celebrated example of this in England is the Lord Mayor's Show, held annually in London on 9 November. It was in 1215 that King John first granted to the citizens the right to elect their own Mayor, and they then accompanied the man of their choice in procession to Westminster to gain the approval of the King or his justice. The Lord Mayor has gone in turn

A PERFORMANCE OF THE ANNUAL PAGEANT AT RUNNYMEDE ON THE THAMES, WHERE KING JOHN SEALED MAGNA CARTA IN 1215

In this scene he is shown reading the conditions laid down by the barons. *The Times*

on foot, on horseback, and by barge; the gilded coach in which he now rides dates from 1757. The present model, built in 1896, is an exact replica of the first one. Because of wars and other reasons the series of processions has been interrupted, but it still takes place, and nowadays the pageant generally illustrates some particular aspect of the national life, such as seafaring, agriculture, or industry.

On the continent, too, pageants have flourished, notably in Russia, where the arrangement and control of crowds for dramatic effect has become a highly skilled art and has had its influence on the theatre and cinema. In America, also, pageants have been much performed in this century, often being made to represent abstract ideas such as democracy, or religious themes. In England there is some indication that the popularity of pageants is now declining, and that, although everybody still enjoys a brilliant spectacle, the energy, enthusiasm, and money necessary to organize such great communal dramas are no longer readily forthcoming.

See also CARNIVALS; MILITARY TATTOOS.

PALMISTRY, *see* FORTUNE-TELLING.

PANTOMIME, *see* HARLEQUINADE AND PANTOMIME.

PAPER CHASE, *see* TRACKING.

PAPER GAMES. Some of the simpler paper games for two people are very old, probably being once played before the existence of paper by drawing on the earth with a stick. They are still played with chalk on the street pavements. The use of two ancient mystical symbols in the game Noughts and Crosses suggests some connexion between some of them and magic rituals —charms, spells, and mystical signs. In Noughts and Crosses, too, a 'draw' is always scored up to an imaginary player, 'Old Man', or 'Old Nick', which suggests that the devil is taking some part in the proceedings.

Noughts and Crosses is played on a chart with nine spaces, each of the two players filling in one space in turn with his particular symbol until one of them has filled in three in a row. The same principle is used in a more complicated way in the old game Nine Men's Morris (*see*

BOARD GAMES). A similar game for two is Boxes or Squares, in which even lines of dots are marked on the paper. Each player in turn joins two dots with a line, and scores a point every time he completes a square. A familiar guessing game, sometimes called Hanging, is also played with dots. One player thinks of a word (or a saying or quotation) and represents each of the letters of the word with dots. The other player tries to guess the letters, and at every failure, part of a gibbet, and finally the parts of a hanging man are drawn at the side of a page—his aim, is, of course, to complete the puzzle before he is finally 'hanged'. In Higgledy-Piggledy a circle is marked out on a piece of paper and numbered rather like the board used in DARTS (q.v.). The players shut their eyes and take it in turns to stab at the circle with a pin or a pencil, each adding the number he touches to his score.

A great many paper games for several players are modelled on Consequences. This game, in which all the players combine to make up a story according to a conventional pattern, was popular in the 18th century, and is mentioned by Jane Austen. Each player writes down part of the story at the top of a strip of paper, folds it over so that it cannot be seen, and passes it on to the next, who adds the next part. The pattern of the story is as follows: a man's name, a woman's name, a time and place of meeting, what the man said, what the woman said, what each did, what the consequence was, and finally what the world said. The papers are then read aloud, the fun arising from the absurdity of the collaboration. A variant of Consequences is Head, Body, and Legs, in which the players collaborate in the same way to draw a person. There is also a rhyming game, sometimes called Tribal Lays, in which each player writes a few lines of verse on the strip, using as a guide only the rhyme or the last link of what has gone before.

See also PUZZLES; PARTY GAMES.

PARKS AND GARDENS. Nearly all towns and cities have their parks and public gardens, designed so that town dwellers may enjoy pleasant scenery close at hand. Many of these were once part of private estates or have been adapted from the grounds and pleasure gardens adjoining a palace or town house. Kensington Gardens, for instance, now a favourite resort of Londoners, were originally the gardens of Ken-

sington Palace, and the beautiful Tuileries Gardens in Paris, which are laid out in a very formal pattern, were designed in Louis XIV's reign to surround his palace. Some of London's royal parks have a similar origin—Hyde Park, for instance, originally belonged to the manor of Hyde, attached to Westminster Abbey, but was taken by Henry VIII on the dissolution of the monasteries, and eventually became London's most famous park. Other parks, of course, have been specially planned as pleasure resorts for the public—Central Park, New York, for instance, was planned as a park in the 19th century. Half of it is wooded, having been planted with a great variety of native and foreign trees.

Both parks and public gardens once played a very different part in social life from that which they play to-day, many of them having been the resorts of fashionable society. In the 18th century London was ringed by pleasure gardens, attended during the season by all the leading members of society. These gardens were lit at night by lamps fixed to the trees, refreshments were served, and all kinds of entertainment, such as concerts and firework displays, were offered. The most famous were the gardens of Ranelagh and Vauxhall. Ranelagh Gardens originally belonged to Viscount Ranelagh, and surrounded the mansion which he built in the late 17th century. In 1724 they were opened as a place of entertainment, and in a building called the Rotunda, concerts were held, and tea was served in the tiers of boxes which lined the walls. Ranelagh was famous for its concerts and masked balls. Vauxhall Gardens were originally part of the manor held by Faulkes de Breauté, and were laid out as pleasure gardens in the 17th century, and developed still further in the next hundred years. They were larger than Ranelagh and equally popular, being noted for the supper parties held there. A good description of the pleasures of Vauxhall is to be found in the novel *Evelina* by Fanny Burney. Both gardens declined in popularity at the end of the 18th century, and were finally closed. Ranelagh Gardens now form part of the grounds of Chelsea Hospital.

London's parks were also popular with society from the 17th century onwards. St. James's Park was originally planned by Henry VIII as a deer park, tennis court, and bowling green, and laid out as a pleasure garden by Charles II. In the 18th century it was a favourite haunt of society, who delighted in walking down the

THE TUILERIES GARDENS IN PARIS
The tulips, planted in formal beds, were presented to France by the Dutch Government in 1938. *The Times*

formal promenade of the Mall, shaded by its double avenue of limes and elms. St. James's Park was the site of the famous Milk Fair where milkmaids sat with their cows selling milk to the passers-by—a favourite drink being a mixture of milk and Spanish wine. The title 'The Park', once used for St. James's, is now reserved for Hyde Park, which has superseded St. James's as a fashionable resort, and is notable especially for the riding in Rotten Row. Hyde Park has had its other uses, too—in the 17th and 18th centuries it was a favourite duelling-ground, and to-day Hyde Park Corner is famous for its soapbox orators. Many cities of the world have their counterpart to Hyde Park, the Central Park in New York, for instance, the Tiergarten in Berlin, and the Bois de Boulogne in Paris.

Many towns, especially those of recent growth such as Birmingham, have specially-planned municipal parks, their distribution carefully arranged so that no large areas of streets and buildings are too far away from patches of green. These parks are deliberately designed as entertainment centres: there is generally a bandstand, and sometimes a children's corner equipped with swings. Playing-fields, bowling-greens, and tennis courts are also included.

There are still in England a few of the great deer parks which once covered vast areas of the country. In the Middle Ages they were the

special preserve of the King and his nobles: no one could enclose a park without a direct grant from the King, and the wealth of the barons was measured by the number of such parks they owned. As time passed, these preserves were gradually abandoned, and the grounds were built on or used for other purposes, such as cattle-grazing. Only a few such parks now remain, the best known being Windsor, Richmond, and Blenheim. These all still form part of royal or private estates and are open to the public only by courtesy of their owners. They consist of large areas of rough wooded pastureland, offering pleasant shady paths for walking and riding, in contrast to the town parks with their formal flower beds and well-kept lawns.

See also NATIONAL PARKS; BOTANICAL GARDENS.

PARTY GAMES. Games have always formed part of social entertainment for adults as well as children. Such games fall into three types: they make opportunities for flirtation, they contain jokes in which one set of players makes fun of the others, or they provide competitions—tests of luck, memory, or skill. The last type of game is the most numerous and the most popular. Some games, such as the traditional SINGING GAMES or HIDING GAMES (qq.v.), have been favourites for many hundreds of years, and nearly all the other party games we know have been played in some form for the past 200 years at least. New games are often invented, but they are generally only variants of something older, the basic principles remaining the same. In all such games there needs to be opportunity for simple self-expression -- moving about to music, shouting, laughing, or singing.

There used to be innumerable kissing and pairing games, but few are still played. Of these, 'Kiss in the Ring' has perhaps the most ancient origin, being one of the many games which have apparently grown out of the tribal customs of capturing the bride. It is almost the same as the singing game 'Drop Handkerchief', except that the chase ends with a kiss in the middle of the ring. 'Postman's Knock', although a much later game, has been popular with at least two generations. The players are numbered, and one, who represents the postman, stands outside the door and calls a number, announcing that he has a postcard (one kiss), a letter (two kisses), or a parcel (three kisses) for one of the party. The kisses are claimed outside the door, the recipient

then becoming the postman. The numbers are changed each time so that the 'postman' does not know who is coming. To-day 'Winking' is the most popular of the kissing games. In this the players form two rings, the girls seated and the men standing one behind each chair. There is one empty chair. The man behind this winks at any girl in the circle, and she then tries to reach the empty seat before her partner can stop her. A kiss is claimed when she finally arrives in the seat. 'Hissing and Clapping' or 'My Friend's Seat' is played in various ways, but was originally a pairing game. One player goes out, and the others agree as to which girl he is to sit by when he comes in. They try by hissing when he moves away and clapping when he approaches, to direct him to the right seat.

Part of the fun at parties comes from deliberate absurdities and from practical jokes, of which there is endless variety, but most belong to certain conventional types. There are the round games of the Consequences type, such as 'Whispering', in which a message is whispered round a circle, or 'Cross Questions and Crooked Answers', in which each player asks a question of his neighbour on one side and answers one put to him by his neighbour on the other. Each player then puts together the question and answer he receives—the result being, of course, quite absurd. There are countless practical jokes and tricks, often played on a blindfold victim. One standard trick is to challenge the players to repeat a formula, which they fail to do because they neglect some small action which they had not realized was part of it—a cough, perhaps, an exclamation of 'Look here', or the use of the left hand instead of the right.

The majority of party games are competitive. The simplest kind work on the principle of elimination, 'Musical Chairs' being a typical example. 'Musical Parcel' is a popular modern version of the game. A parcel is passed round the circle of players to music, and the player holding it when the music stops has, before he drops out, to remove one wrapping and carry out whatever direction he finds written underneath (*see* FORFEITS). The last player left in claims the contents of the parcel.

Another very common type of competition tests the quickness of the player's reactions. An old, simple form is 'Simon Says', in which the players are ordered to perform various actions but must obey only when the leader begins a

command with 'Simon Says'. Anyone obeying a command not begun with these words pays a forfeit. In other games the player must remember a name or number given him at the beginning, and must always react in a certain way whenever that name or number is called. 'Family Coach' is an old form of this game. Each player is given the name of a certain part of the coach; a story is told about the coach, and each player must get up and turn round once when his part is mentioned. In 'General Post' all the players except one choose the name of a town. The leader calls that the post goes between any two towns. The players which represent these towns must then change seats without letting the odd player slip into either seat. At the cry of 'General Post' the whole party changes seats. In 'Spinning the Trencher', sometimes played as a team game, the player whose number is called must catch a spinning plate before it falls, or else pay a forfeit. An old game, popular in the Navy, is 'The Priest of the Parish', which has an amusing formula. The players sit in a ring, and are numbered from one upwards. The 'priest', who sits at the head, begins 'The Priest of the Parish has lost his considering cap. Some say this and some say that, but I think number such and such has it. Two-four-six-eight-ten.' Before he has finished counting, the player whose number was called must begin 'Me sir? No sir; not I, sir. I think number so-and-so has it', and so on. When a player fails to begin his speech before he is counted out, he goes to the bottom, and everyone moves up one place.

Many games take the form of memory tests. The standard type is a round game in which each player adds one word or phrase to a list, saying his own addition and then repeating in reverse order all that has gone before. At each mistake a forfeit is paid, or the player drops out. These games follow a very old formula used in such old English songs as *Green Grow the Rushes-O* and *The Twelve Days of Christmas*. In the latter there are twelve verses, representing the twelve days, each new verse adding a line, and the chorus repeating them all in reverse order. The last verse runs:

> On the twelfth day of Christmas,
> My true love gave to me:
> Twelve lords a-leaping,
> Eleven ladies dancing,
> Ten pipers piping,

> Nine drummers drumming,
> Eight maids a-milking,
> Seven swans a-swimming,
> Six geese a-laying,
> Five gold rings,
> Four colly birds,
> Three French hens,
> Two turtle doves,
> And a partridge in a pear tree.

One game of this kind is the familiar 'I went to market and bought . . .', each player adding a new purchase to the list. More complicated is 'That Reminds Me', in which each player adds something suggested to his mind by the last word: 'cabbage' suggests 'green', 'green' suggests 'sickness', 'sickness' suggests 'bath-chair', and so on. A popular visual memory test is that played with a number of small articles on a tray, the players competing to see how many they can remember when the tray is removed.

RIDDLES and PUZZLES (qq.v.) are an ancient means of entertainment, and many party games take the puzzle form. The clues to the puzzle are given in many ways, by an initial letter, by answers to questions, by conversation, or by acting. The simplest of all is, perhaps, the old children's game 'I spy', of which the formula is 'I spy with my little eye something beginning with A (or any letter)', the answer always being something within sight. One of the most popular of guessing games is 'Animal, Vegetable, or Mineral' or 'Twenty Questions'. One player thinks of any kind of object; then the rest of the party are allowed only twenty questions, of which the first is always 'Is it animal, vegetable, or mineral?', to discover the object. In a similar guessing game, often used to open a party, each player has a name pinned on to his back and tries to find out what it is by questioning the others, who must only answer 'Yes' or 'No'. In 'Clumps' the game is played in groups or 'clumps', the clump which first guesses the chosen object being the winner. In other guessing games the players try to introduce the clues into ordinary conversational remarks. In 'Proverbs' the person guessing asks any type of question, such as 'How old are you?', and each answer must include one word of the selected proverb.

The most common type of competition of skill is the word test, which usually involves thinking of as many words as possible beginning with the same letter. One of the oldest of these is 'I love

my love', in which the players have to fill in the following blanks, the first player using the letter A, the second B, and so on round the circle:

I love my love with an (A) because he is (amiable).

I hate him with an (A) because he is (angry).

His name is (Arthur) and he lives in (Amsterdam).

He feeds on (asparagus) and (artichokes).

'The Minister's Cat' is the same type of game, each player thinking of an adjective beginning with A, B, and so on, to describe the cat. The first to fail pays a forfeit. Sometimes this game becomes a kind of general knowledge test, the players competing as to how many rivers, famous men, book titles, and so on, all beginning with the same letter, they can write down in a given time, marks being given only for those which no other player has thought of. 'Telegrams' is a more difficult and amusing game: a word, perhaps 'sugar', is chosen, and telegrams are composed, the initial letters being the letters of 'sugar' —'Sorry, Uncle George's application refused'. In one familiar spelling game a player starts the first letter of a word, and each succeeding player must add a letter without ending a word. Any player who ends a word, or cannot say what word he is spelling, pays a penalty. In another game, 'Capping Verses', each player quotes a line of poetry which must always begin with the last word or letter of the line just quoted.

There are many other competitive games: smelling and tasting competitions, identifying advertisements, or tests of dexterity. Some of the most entertaining are those which test the imagination and ingenuity —as when one partner dresses up the other as a character, using only newspaper and pins, or one player arranges two others as a statue. The more ingenuity which players put into a game, the more fun there is to be got from it.

See also CHARADES; FORFEITS; HIDING GAMES; PAPER GAMES; PUZZLES; RIDDLES; SINGING GAMES.

PARTRIDGE SHOOTING, *see* GAME SHOOTING.

PATIENCE. Games of Patience, or Solitaire, are for the most part card puzzles for solitary players. There are countless forms, some probably ancient, which have been handed down by oral tradition and often not written down until comparatively recently. It is still unusual
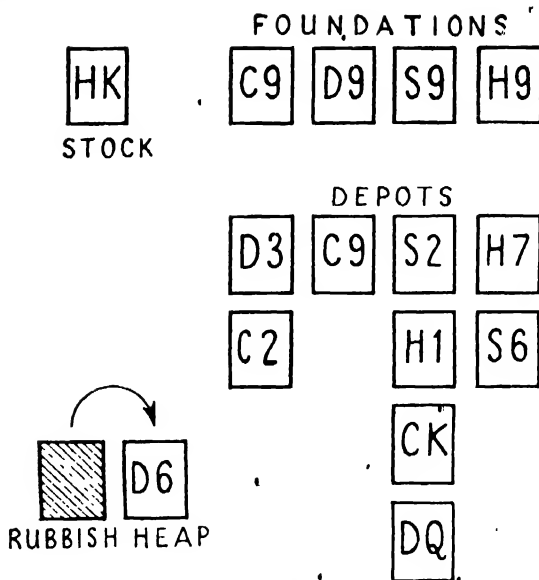

FIG. 1. A TYPICAL PATIENCE LAY-OUT

to find two compilers agreeing on the name or exact form of any version. The first book on the subject published in England was translated from the French in 1859. An American magazine article of 1901 refers to the inevitable boredom of the lady of leisure unacquainted with Patience, and it is possible that it was among such ladies that most forms of the game originated. The same writer and others refer to the supposed moral value of Patience, suggesting that it is a stiff moral test to refrain from cheating when there is no opponent to verify one's honesty. Napoleon and Queen Victoria are

DEPOTS
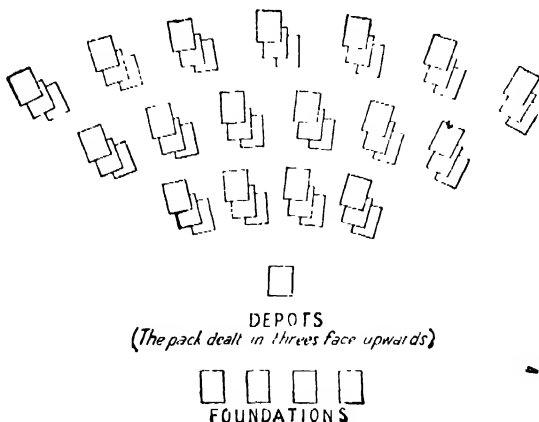*(The pack dealt in threes face upwards)*

FOUNDATIONS

FIG. 2. LAY-OUT OF THREE-CARD FAN, A TYPICAL FAN PATIENCE.

among the well-known people said to have been addicted to Patience.

Most forms of Patience are played with one or two packs of cards. The player deals them out in front of him, either face up or down, in various patterns, and then by a series of regulated moves attempts to sort them out into a stipulated order, usually either an ascending or descending sequence, often in separate suits. Various terms are common in the game. As a rule only 'exposed' cards—those not overlapped by any other—may be played, by being 'built' on to the 'foundation' of a sequence, which is often the ace; or on to a 'depot'—a column of cards serving as a kind of shunting yard, in which the right card can be manœuvred into an exposed position, and so transferred to a foundation. That part of the pack not spread out may form either a 'stockpile' in which the top card only is exposed, or a 'rubbish heap,' which is turned over three cards at a time when other moves are blocked (see Fig. 1).

There are three main varieties of Patience games; those of pure luck, where the order of cards at the start determines whether a solution is possible or not, and where no choice of action is offered; those in which a choice is possible and skill is important; and those designed as contests of speed between two or more players, such as Derby or Racing Demon. The element of skill is generally more important in games in which more than one pack is used.

A simple basic form with many variations is one sometimes called Sir Tommy. One pack is dealt out on four depots, and as the aces turn up, they form foundations, one above each depot. Other cards are played wherever possible as soon as they are exposed. The object is to sort the pack into ascending sequences on the four foundations, little skill being required. Many games are played by 'filling a gap'. For a simple example, the whole pack is dealt out in four rows, a gap being left after the first card in each row; these may be filled by the card forming an ascending sequence of

suit with the card on the left; the gap made by moving it may be filled in the same way, and so on. So the sequences are built up. A third basic form is the clock, in which, for example, the cards may be dealt out in twelve heaps of four in a circle, the four remaining cards forming the foundations in the centre. In some versions of the game the cards are laid out in threes in a fan, one card in each three being an exposed card (see Fig. 2). A good example of this is called Demon Fan. Another very popular game requires the building of an inverted flight of steps; thus, in King Albert, nine rows are laid out face upwards, with nine cards in the top row, eight in the next, and so on; the seven cards remaining form a stock, all exposed; exposed aces are put out as foundations for ascending suits, and exposed cards may be played on to them, or on to the columns in descending sequence of alternate colours, that is to say, a red ten may be built on to a black Jack, and so on. In some Patience games the object is to form patterns with the cards. There are many more individual and sometimes extremely complicated kinds of Patience.

See also CARD GAMES; PLAYING CARDS; POKER.

PELOTA is an old ball game, not unlike FIVES (q.v.), of Basque origin, which has developed into several forms, and is still played on both sides of the Pyrenees. One popular version of the game is played by several players a side against a front wall, using their bare hands, or a leather

A GAME OF PELOTA
The players are using wickerwork bats or 'chisteras'
_F.N.A._

or wooden protector, or a 'chistera' strapped to the wrist. A chistera is a wickerwork bat about 3 feet long, in which the ball is caught, and from which it is flung back against the wall with speed.

In another version there are usually three players to a side. The server bounces the ball on the 'but', a stool about 30 feet from the wall, and directs it low against the wall. When it is returned, the ball must be hit over a line 3 feet from the bottom of the wall, and under a net at the top. As in LAWN TENNIS (q.v.), the score proceeds from fifteen, thirty, forty, to game. The ball must be played on the volley or after it has bounced once.

See also Vol. I: SPANIARDS.

PERCUSSION INSTRUMENTS. These are musical instruments from which sound is produced by striking. They are probably the oldest family of instruments in existence and their use is universal. Their European development has been largely influenced by their popularity among the peoples of Asia and Africa. The large number of percussion instruments can be divided into two main groups: those which have a definite musical pitch, and can contribute melody and harmony to the music; and those with no definite pitch, but which add rhythm, intensity, and dramatic effect. In the first group there are a number of instruments such as the piano, which are percussion instruments in that they produce sound when struck, but which are described more conveniently under KEYBOARD INSTRUMENTS (q.v.).

1. INSTRUMENTS WITH DEFINITE PITCH

(a) 'The kettle-drum' or 'timpano' (plural: 'timpani') consists of a sheet of calf skin stretched over the open end of a hollow inverted bowl made of copper or alloy, the bowl being usually fixed on a stand. The skin is held down by a wooden hoop, the tension of which can be increased or lessened by turning screws which are attached to the metal bowl. Thus the instrument can be tuned to particular notes. Kettle-drums are
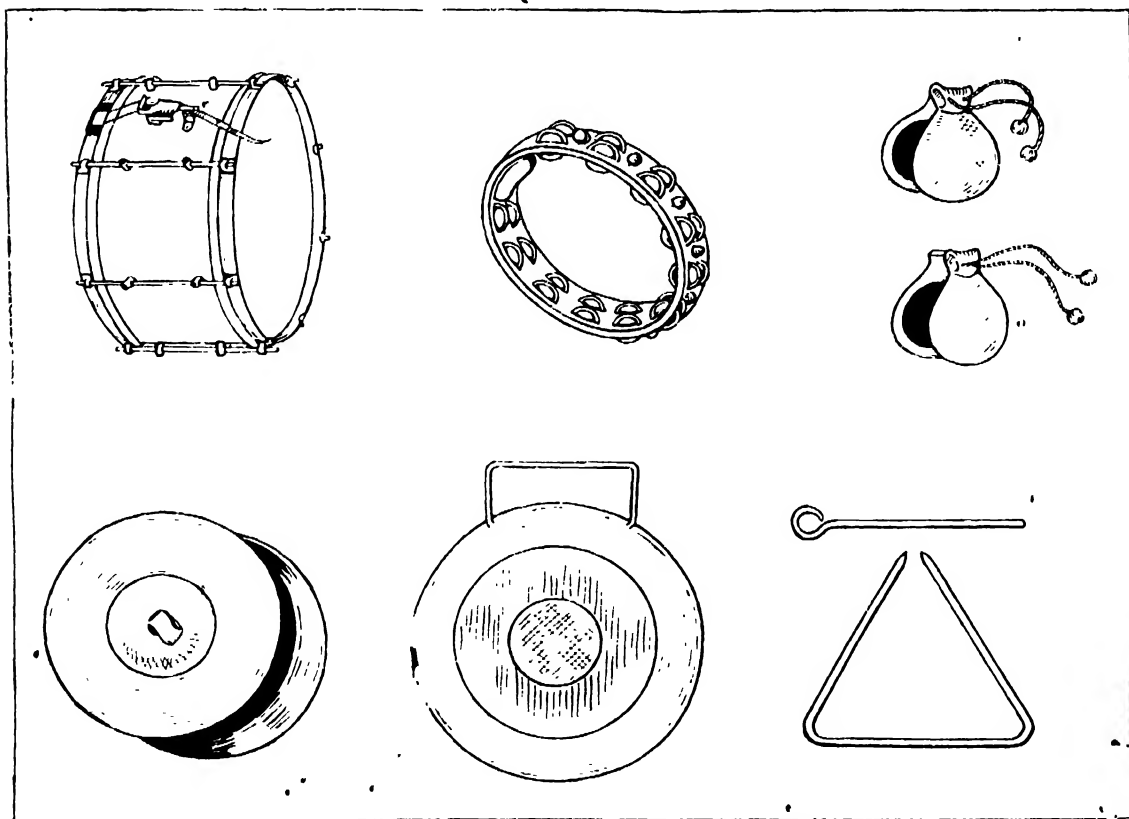
TOP ROW: SIDE DRUM; TAMBOURINE; CASTANETS.   BOTTOM ROW: CYMBALS; GONG; TRIANGLE

ayed with two sticks which usually have maracca tips padded with felt. The point where the drum is struck is important as it affects the quality of the tone produced. Kettle-drums were introduced into Europe from the east at the time of the Crusades in the 13th century. They were known until the middle of the 16th century as 'nakers', which is derived from an Arabic word. Their original use was military, the drums being carried on both sides of a horse. Kettle-drums were introduced into the orchestra towards the end of the 17th century, and since then they have always been available in at least two sizes: usually a third intermediate size is used to-day. They are very effective in building up a crescendo for the orchestra and in emphasizing strong rhythms. They are also very effective when played softly, provided the orchestration is skilfully handled.

(*b*) 'Bells'. For orchestral use these usually take the form of tubular bells. They vary in length, and usually number eight or thirteen. They are held in a wooden frame to which a damper is attached and worked by a wooden pedal. They are light in weight and easy to transport.

(*c*) The 'glockenspiel' was originally designed as a toy imitation of the church carillons (*see* BELL-RINGING), and consisted of a set of tiny bells with a range of about three octaves. Mozart and Handel used it in its early form. It disappeared for a short time, and when it reappeared in the second half of the 19th century, steel plates were substituted for the bells. The keyboard was discarded, and the player used a wooden hammer to strike the plates. It has a bright and sparkling tone.

(*d*) The 'xylophone' is sometimes confused with the glockenspiel; but it is larger, and instead of having steel plates, is composed of a series of graduated wooden bars, usually made of rosewood. Many xylophones are fitted with resonators. The bars are struck with hammers or beaters which are either globe-shaped and
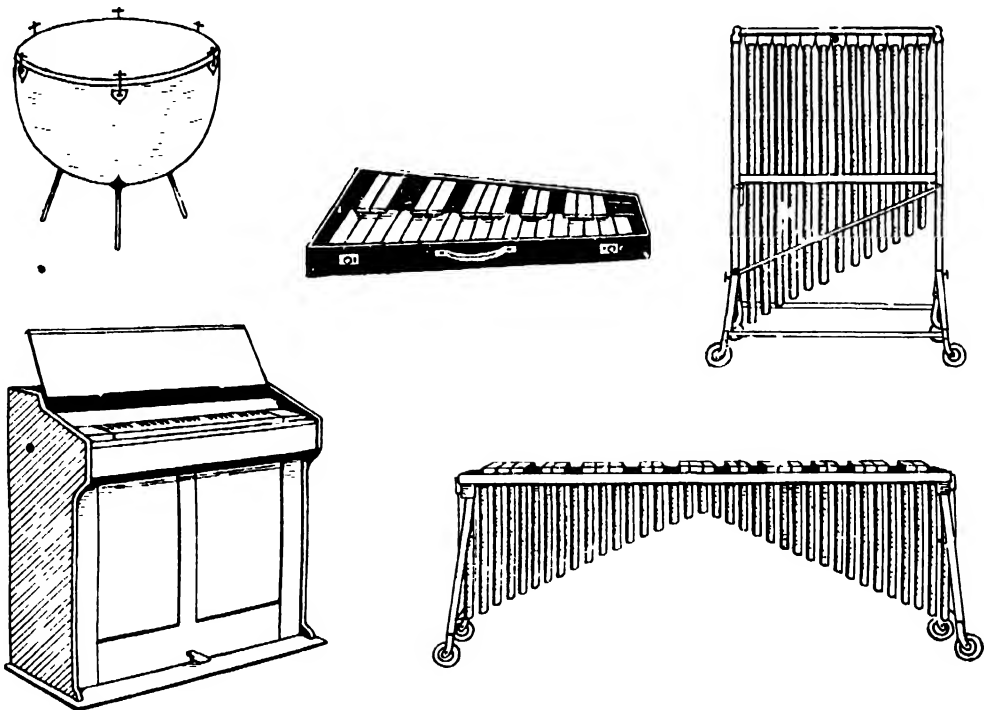
TOP ROW: KETTLE-DRUM; GLOCKENSPIEL; BELLS.   BOTTOM ROW: CELESTA; XYLOPHONE

made of boxwood, or spoon-shaped and made of willow. The xylophone was possibly made known by a man called Gusikor in the early 19th century. Arpeggios, rapid notes, glissandoes, and rapid scale passages can be very effectively played on it. The French composer Saint-Saëns used it in his *Danse Macabre* to represent the bones of a skeleton.

(*e*) The 'marimba', which originated in South Africa, is very like the xylophone, and consists of bars of wood with resonators fixed under each bar. The heads of the sticks are made of rubber. Marimbas large enough for four players are found in Mexico and South America. These have a bladder attached to each resonator which not only increases the sound but gives a buzzing effect to the tone.

(*f*) The 'celesta' is like a small piano, and consists of a set of steel plates to each of which a wooden resonator is attached. It is operated from a miniature keyboard, the steel plates being struck by hammers. Its range is four octaves and, like the piano, it is written for two-stave music, sounding an octave higher than written. Its tone is clearer and more sustained than that of the glockenspiel.

2. INSTRUMENTS WITH NO DEFINITE PITCH

(*a*) 'Drums'. The most important of this group of instruments are the 'side-drum', 'bass-drum', and 'tenor-drum'. It should be noted that the kettle-drum comes into the previous category. The side-drum is a small cylindrical drum made of brass, with parchment 'heads' stretched over each end. One head has strings of catgut called 'snares', which produce a dry, crackling effect: the other head is struck by two sticks made of hard wood. The official technique of beating double alternate strokes with each hand produces the 'roll'.

The bass-drum is the biggest drum used. It consists of a wooden shell of wide diameter with parchment heads stretched across both ends. It has no snares. It is beaten by a stick which has a large piece of rounded felt attached to one end of it. It can be muffled either by slackening the head or covering the drum.

The tenor-drum in size lies half-way between the side-drum and the bass-drum. Its shell, which is made of ash-wood, is cylindrical in shape. It is slung to the size of the player. It is not much used in the orchestra.

(*b*) The 'tambourine', one of the oldest instruments, consists of a wooden hoop with a parchment hood. In the side of the hoop small circular metal plates are fixed. It can be played either by striking the parchment with the knuckles or by shaking it.

(*c*) 'Castanets' are Spanish instruments, consisting of two hollow pieces of hard wood which are clicked together by the fingers. Sometimes the left hand holds a larger pair than the right, so that two distinct qualities of tone can be obtained. Castanets are chiefly used in Spanish dance music.

(*d*) 'Cymbals' consist of two circular brass plates of equal size with leather handles. They are played either by clashing the plates together, striking one or two plates with the drum-stick, 'rolling' a single plate with two sticks, or vibrating the edges of the plates against each other. In dance bands cymbals are frequently fixed on the side of the big drum. Pairs of cymbals are made in many sizes, and the quality of tone produced is dependent upon the size and make of the instrument and the skill of the player. Their most frequent use is to emphasize the high lights in music, although they can be met in an infinite variety of other ways.

(*e*) The gong or 'tam-tam', which originally came from China, is a broad circular plate of thick metal shaped rather like a huge garden sieve. A roll can be produced on the gong on a single stroke. The instrument can produce a most awe-inspiring effect, and this is usually the extent to which it is used in orchestral music. A soft drum-stick is employed as a beater.

(*f*) The 'triangle' is a steel bar bent into the shape of a triangle and struck with a metal beater. Various sizes of the instrument are in common use. Its ringing tone can be heard clearly above the other instruments of the orchestra.

(*g*) There are a great many other percussion instruments, particularly associated with jazz playing. Among these are the 'jazz stick' or 'slap stick' of flapping wood; the rustling tin sheet; and wire brushes used to strike the snare-drum and cymbals.

See also DANCE BANDS; MUSICAL INSTRUMENTS, HISTORY OF; ORCHESTRA.

PERFORMING ANIMALS. Different kinds of performing animals used to appear with the medieval STREET ENTERTAINERS and later became a feature of FAIRS, MUSIC HALLS, and, of course, the CIRCUS (qq.v.), where they are usually

be seen to-day. Tricks performed in public by trained animals are generally based on the natural habits of the animal. Bears, for instance, which have a natural tendency to rear up on their hind legs, can be taught to dance, and monkeys, used to leaping about in the trees, to walk the tight-rope. Kangaroos, whose natural method of fighting is to grapple their opponent seizing him by the head and then clawing at him with the back legs, will 'spar' for an opening much as human boxers do, and, when equipped with boxing gloves, can be taught to box, proving much steadier than human beings, for they balance on their long tails. Seals and sea-lions, whose habit is to throw up in the air and swallow the fish they catch, have a natural quickness and accuracy, and can be taught to juggle and balance things on their noses. The elephant, whose long prehensile trunk takes the place of an extra limb, can be taught to use it for lifting a rider on to its back or to provide amusement by suddenly squirting water from it.

Although methods of training have changed, the basic principle has always been the association of ideas—the animal acquiring by a system of constant repetition with either punishment or reward a habit of performing certain actions at a given signal. Punishment was more often used in the past, the animal learning to associate pain with the non-performance of its tricks. Bears, for instance, so it is said, were once taught to dance by being placed on a heated plate which caused them to raise their feet alternately to prevent them from burning, a drum being played the while. After constant repetition the bear would raise its feet and appear to 'dance' at the sound of the drum, even when the hot plate was not there. Wild animals exhibited in travelling menageries used to be goaded with whips and red-hot irons until they jumped through hoops and over obstacles. The lion-tamer of these days was a muscular figure, clad in a lion-skin and armed with a whip and pistol, which he fired at the end of the performance.

In 1880 Carl and Wilhelm Hagenbeck invented what is known as the 'gentling' method of training animals—an important advance, for it is not only more humane, but also has much more successful results with the animals. The trainer wins the animal's confidence by speaking to it quietly, caressing it, rehearsing every trick patiently and, above all, rewarding the animal with food every time it succeeds. The animal thus associates the trick with the reward, and will perform it at the same signal even when there is no reward. For example, one famous performing sea-lion named Jellicoe used to enter the ring on a motor-cycle (automatically controlled by his mistress who travelled in the side-car). A loud report would be heard and Jellicoe would dismount, bend down and appear to investigate the works of the motor-cycle. When satisfied, he would mount and ride off again. During training, a pistol would be fired and fish thrown under the cycle, so that Jellicoe developed a habit of always looking underneath whenever

A BEARWARD WITH HIS PERFORMING BEAR
Marginal drawing from *The Romance of Alexander* (c. 1340) Bodleian MS. 264.

he heard a report. The same method works with nearly all animals. Some animals are always dangerous to some extent, but 'gentling' considerably reduces the danger, and by its means they can be induced to perform simple actions, such as jumping on to stools at a given signal. Intelligent and docile animals such as sea-lions, elephants, and of course, dogs and monkeys, respond extremely well to training, and will often seem to enjoy performing and to be aware of the applause of the audience.

In the Middle Ages bears were especially popular as performing animals. Early drawings show them tumbling, dancing, and lying on the ground at the command of their masters. Dancing bears were a familiar sight in the streets, even as late as the 19th century, until the quarantine restrictions made it impossible to import them from the continent. Performing bears are still popular, however, and in Germany often accompany the CARNIVAL procession (q.v.), collecting money from the crowd. In the modern

A LION PERFORMING ON THE TIGHT-ROPE AT BARNUM AND
BAILEY'S AND RINGLING'S CIRCUS, NEW YORK, 1938
It took this lion 2 years to learn the trick
New York Times

circus they perform a variety of tricks, even learning to ride bicycles, and at the Zoo, where they are used to being fed by an admiring crowd, they will perform unrehearsed antics of their own.

Monkeys, being natural acrobats, have always been favourites as entertainers, and were very common in the Middle Ages. They were led by their masters on a chain, their usual trick being to leap backwards and forwards over the chain at a command. They were common at the fairs, and in the 18th century used to perform as tight-rope walkers at Sadler's Wells and other early music halls. The Italian organ-grinder, accompanied by his monkey in a cap and jacket, used to be a common sight in the streets. The monkey would dance to the music and afterwards take round the hat. Monkeys and apes still remain the most popular of performing animals, especially chimpanzees which are capable of learning the most intelligent tricks. They are naturally mischievous and delight in imitating human beings. The chimpanzees' tea-party is a favourite feature of the London Zoo (q.v.),

and pet chimpanzees have sometimes learnt to do the most complicated things—there was one who could use a sewing machine, even threading the needle herself. Chimpanzees have to be trained young, however, and are best taken at about 2 years old, as they are inclined to grow savage as they get older.

In the 17th century dancing dogs were evidently a familiar sight at the fairs. Ben Jonson in his play, *Bartholomew Fair*, writes of 'dogges that dance the morrice', and at Southwark Fair, in the early 18th century, there was a 'Ball of little dogs', all of whom had elaborate French names and performed minuets and other dances. Dancing and acting dogs are still sometimes seen on the stage, some troupes performing entirely on their hind legs. Dogs are also to be seen in films, such as *Owd Bob*, where their performance appears much more natural, for they are acting the part of dogs instead of attempting to do quite undoglike actions. One of the most famous of these film dogs was the Alsatian 'Rin Tin Tin' of the 1920's.

Horses were apparently taught to do very complicated tricks in the Middle Ages. There are pictures of them rearing up on their hind legs engaged in mock combats with their masters, or standing on their fore legs and beating on a tabor with their hind legs. An 18th-century show bill records a performance by the 'finest taught horse in the world', who could fetch and carry like a spaniel dog, tell the number of spots on a card, and leap through a hoop. The performances of horses in the modern circus are not so varied, but usually consist of dancing in time to the music and mounting up on boxes or ledges at a given command. Riderless horses of this kind are known as 'liberty horses'. Mainly, however, horses are used in the modern circus for trick riding, a broad-backed breed being obviously most suitable.

Some very unexpected feats have been accomplished by the most unlikely animals. One old illuminated drawing, for instance, shows a cock dancing on stilts, and another a hare upon its hind legs beating a tabor. Performing hares playing a tambourine or a drum were also seen occasionally in the 18th century. Hardly less remarkable was the performance in Cockspur Street in 1775 of a troupe of small birds which, equipped with little hats and miniature muskets attached to the left wing, formed up and drilled like soldiers, and even manipulated a miniatu'.

BERTRAM MILLS CIRCUS

Oil-painting by Lund Chauvin

cannon. Another remarkable 18th-century performance was that of a 'learned pig', exhibited in Pall Mall, which apparently was able to pick up letters written on pieces of card and arrange them into words. The most ingenious trainers of all, perhaps, are the keepers of 'Flea Circuses', which are still to be seen at fairs—the main attraction usually being a chariot race between fleas attached by wire to tiny aluminium chariots; and sometimes, if supported in a position where their legs can have free play, the fleas can be made to 'fight' with miniature swords.

See also CAGE BIRDS; CIRCUSES; PETS; STREET ENTERTAINERS.

See also Vol. II: INTELLIGENCE IN ANIMALS.

PETS. It is difficult to distinguish definitely between domestic animals which are kept for their usefulness and pets kept for amusement; and the farther back we go, the less easy it becomes to make any distinction at all. Of one thing we can be sure, however, that one of man's first pets was the dog, just as it was one of the first wild animals he tamed. Prehistoric remains in Scandinavia, dating from about 10,000 B.C., have been found to contain the bones of dogs close by those of men. These dogs were perhaps scavengers rather than pets; but it is hard to believe that some of them at least did not make friends with the men who provided their food. Egyptian monuments of 3000 B.C. depict hounds and terriers, showing that domestic breeds had appeared by then. Now nearly every part of the world has its own breeds adapted to the climate and the use to which the dogs are put (*see* DOG BREEDS). The cat was also tamed by the ancient Egyptians, and CAGE BIRDS (q.v.) have been popular in the West and the Far East from earliest times.

Pets are kept because of the affection and companionship which they give to their masters: dogs, cats, and monkeys, especially, are of this kind. Monkeys figure in court scenes of the Ancient Egyptians and Persians, for they have been popular as pets for thousands of years because of their affectionate nature and amusing habits. Of all animals they are the most willing to allow themselves to be dressed up, and to imitate human mannerisms. They are delicate and, living naturally in tropical countries, must be kept very warm. Sometimes wild animals such as lions, pumas, and cheetahs can be made into gentle and affectionate pets if they are

caught when cubs and trained from the young state. The cheetah, or hunting leopard, has long been used in the Near East for hunting gazelles, because of its almost incredible speed over short distances. Often wild animals of this kind can be trained to live freely among humans, but they are rarely entirely safe or reliable when fully grown.

Another type of pet is kept for the interest to be derived from watching its behaviour—rabbits, white mice, guinea-pigs, and tortoises are of this kind. Such pets, though they can become very tame, are incapable of being trained. They must usually be kept in cages, though tortoises wander freely about the garden, and are useful as they eat pests. Many rodents thrive in captivity and are easy to look after. Rabbits, as well as being pets, can also be bred for fur or meat (*see* RABBIT-KEEPING, Vol. VI). Guinea-pigs are smaller than rabbits and have long white, brown, or mottled fur. They are passive animals, needing little space for exercise. Like rabbits, they are generally kept in a hutch out of doors (*see* CAVIES, Vol. VI). White rats and mice can be kept indoors, and so can the golden hamster, a rarer pet which has been introduced in recent years from Syria. It is a small rodent with a cheek pouch in which it stores its food. It is clean and has no smell, but it needs a roomy hutch with several compartments, for it is agile and needs plenty of exercise. The food of rodents consists chiefly of fresh green vegetables with the addition of grain, or, for the golden hamster, of cat or dog meat. All rodents breed very prolifically.

Animals such as caterpillars, stick insects, and tadpoles, which are interesting to watch, can scarcely be called pets, for they cannot be tamed, nor do they respond in any noticeable way to their association with humans. Some animals are kept for sport, such as falcons (*see* FALCONRY), cocks (*see* COCKFIGHTING), quails which the Chinese keep for fighting, and fish which the Mexicans breed for the same purpose; but these also are not, strictly speaking, pets.

Many animals are kept for their ornamental qualities—birds for their song and beautiful plumage, fish for their strange shapes and gay colours as well as their interesting habits (*see* AQUARIUM). Oriental people keep cicadas in tiny cages for the sake of their lively chirping; South American women wear fireflies as decoration in their hair; the formal beauty of English

A SWISS GIRL WITH HER PET CHEETAH

The cheetah was caught in Africa when it was 2 months old and became tame enough to play with the little girl

W. Krebser

gardens is enhanced by the peacocks which strut over their terraces. Ornamental geese, swans, and other birds can also be bred in domesticity. They can be tamed sufficiently to come when called for food—the swans on the moat of the Bishop's Palace at Wells ring a bell at feeding time—but they do not show any particular interest in their owners.

Whatever the reason for keeping a pet—for companionship, for the pleasure of watching a beautiful creature, or for the interest of studying its habits, every care should be taken to give it suitable food and accommodation and to make its life as comfortable and happy as possible. For this reason it is necessary to study the natural habits of the animal. Among those that can be trained, it is the best trained which are the happiest. Descriptions of the natural history of the individual animals mentioned in this article can be found in Volume II.

See also CAGE BIRDS; CATS, DOMESTIC; DOGS; HORSES; PERFORMING ANIMALS.

PHEASANT SHOOTING, *see* GAME SHOOTING.

PHILATELY, *see* STAMP COLLECTING.

PHONOGRAPH, *see* GRAMOPHONE.

PHOTOGRAPHY. 1. The word photography is derived from two Greek words which together mean to 'draw by light'. Producing a photograph is simply obtaining the image of an object by the action of light on a prepared sensitive surface.

Taking a photograph with a modern camera is a comparatively simple process compared with that which produced some of the early photographs, still to be seen, for instance, in family albums. The early camera was large and cumbersome to handle, and, when assembled in position, had to be carefully focused on the object—a lengthy operation. To-day, however, with focusing scales on cameras (and built-in range finders on the more expensive models)

the setting may occupy only a few seconds. With the early hand-operated cameras the exposure was made by removing a lens cover, and counting the length of the exposure in seconds. There was also the tedious task of loading and of preparing a sensitive glass plate, for which the photographer had to carry with him a portable dark room or a large plate-changing box. To-day the same operation consists simply of breaking the seal on a carton and loading, in daylight, a roll of film, which provides sufficient light-sensitive material for eight to thirty-six exposures according to the type of camera used.

• **2.** THE CAMERA. To-day there are many styles and makes of cameras, all effective in the particular field for which they are designed. The simplest camera is the fixed-focus design, which produces a sharp image of objects at any point beyond a given distance. The popular box camera and a number of the folding type are of this design. Each is fitted with a lens of varying quality according to price, and a simple direct-action shutter capable of being adjusted to three different speeds, and operated by a spring action. As most photographs are taken out of doors in a bright light, the instantaneous shutter action is more generally used. This throws the shutter over with a 'snap' action, the time taken for the shutter to complete its work being about 1/30th of a second.

Under certain light conditions even the fastest movement of the shutter will allow too much light to pass through the lens, and so a second operation is brought into action to control the amount of light reaching the sensitive film. In the fixed-focus camera this control is a simple one. Three holes of varying size are punched out of a metal strip and can be brought mechanically into position in the centre of the lens. The largest aperture will allow the maximum amount of light to pass through (although the usefulness of the opening is limited by the focal powers of the lens). The second opening is slightly smaller, and the third smaller still. This control by varying openings or apertures in front of the lens has a second and equally important effect. If the diameter of the camera lens is $\frac{3}{4}$ inch, and the three openings range from $\frac{5}{8}$ inch, $\frac{3}{8}$ inch, down to $\frac{1}{4}$ inch, clearer detail can be obtained in the final photographic print when a smaller hole is used—provided the light is strong enough to ensure a properly exposed picture through the small hole. Any variation in the

size of opening allowed to the LENS (q.v. Vol. VIII) alters the depth of focus (see diagrams).

The fixed-focus camera, however, although taking excellent snapshots, does not provide the range of photographic results needed by the more serious and experienced photographer. He
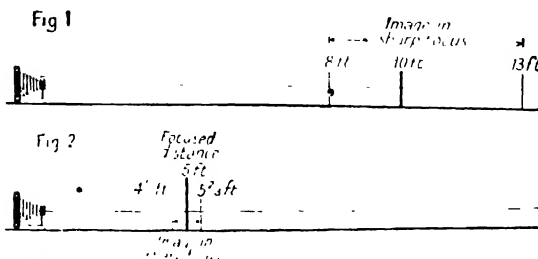
Fig 1

Fig 2

When a camera is focused on an object (10 feet distant in Fig. 1, 5 feet distant in Fig. 2), everything within a varying depth before and behind that object is in sharp focus. The nearer the camera, the smaller this 'depth of focus', which varies with every kind of lens and change of aperture, as well as with distance.

should, therefore, examine the many types of cameras available, and decide which is most suitable for the kind of photography he wishes to practise.

On the more expensive cameras many refinements are included. The lens can be accurately focused at varying distances, the aperture of the lens can be varied over a wide range, and the actual time of exposure can be controlled from one second to 1/1000th second, according to the light and the object being photographed.

3. EXPOSURE. The exact period of time during which light is allowed to reach the film or plate is known as the 'exposure'. Every plate or film is coated with a mixture of light-sensitive chemicals, technically described as the 'emulsion'. This coating is so scientifically controlled that the sensitivity to light of any particular brand of film remains constant. Every type of film has a known photographic speed.

The all-important factor in photography is that the exposure should produce, when developed, a well-balanced negative. Success in producing good finished prints of subjects, such as of landscapes with dark foregrounds and bright sunlit distances, or buildings with strong contrasts of light and shadow, depends essentially on correct exposure. Experience is the major factor in deciding an exposure for the wide variety of photographic subjects that fall within the range of the average photographer, and which, even under identical lighting conditions,

and careful and separate consideration". To assist the photographer in making the correct exposure, various types of exposure meters are obtainable, some being simple to operate, others most complicated. But no meter can replace photographic experience in the task of deciding the exposure required on a selected subject. If the photographer is in doubt when setting the combination of lens aperture and shutter speed, it is always advisable to 'over' than to 'under' expose. With an over-exposed negative, good prints can be produced by careful development and selective print making, but under-exposure has no remedy. It is a golden rule to give any subject the longest exposure with the smallest aperture possible; for if the negative carries detail in the shadows by adequate exposure, careful development will take care of the high lights.

Photographic plates and films are listed under two headings, 'orthochromatic' and 'panchromatic', each with a definite range of sensitivity, measured and defined by scientific standards. Many plates or films in general use belong to the orthochromatic group. These are coated with an emulsion of high green and yellow sensitivity.

Therefore reds, yellows, and orange shades will be rendered darker than real life on the final print. Panchromatic films, however, are strongly sensitive to red also, so they give a better tonal rendering of colour. They are essential when a light filter is placed in front of the camera lens to reduce 'distance' haze, as when photographing cloud formations, for instance. Many standard cameras are fitted with a filter-holder attachment: for general purposes two filters are desirable, a light yellow and a darker yellow-toned piece of optical glass being quite adequate. The lighter filter is used on landscapes to retain the detail in the heavy greens of trees; it is also effective in giving greater variation to detail on buildings, and a greater effect of distance in open landscape. The deeper yellow filter greatly increases contrast, and is particularly useful in recording sky formations, which add pictorial value to many subjects, but are often lost in unfiltered negatives. The beautiful range of tones in snow scenes can be faithfully reproduced by judicious use of filters.

4. DEVELOPING AND PRINTING. The next operation towards the production of a finished

PHOTOGRAPHS OF CHRIST CHURCH CATHEDRAL, OXFORD, TAKEN WITH A PANCHROMATIC PLATE
The sharper one on the left was taken with a filter, which eliminates haze and renders certain colours more accurately
W. Jenkinson

photograph is the development of the exposed plate or film. The action of light on the sensitive emulsion produces what is known as the 'latent (or hidden) image', an undefined combination of silver haloids, which is only made visible and constant by chemical development. All developers' formulae contain three main things: the developing agent such as metol, hydroquinone, or pyrogallic acid; the accelerating agent—which must be an alkali, such as sodium carbonate; the retarding agent- generally potassium bromide. Also an addition of sodium sulphite prevents staining during development.

Throughout the process of development the photographic image is sensitive to light; and to protect the finished result the whole operation is carried through in complete darkness or with the aid of a safelight. Panchromatic emulsions must be developed in complete darkness. This is done by the 'time and temperature method', that is, developing at a definite temperature and for a given time. Orthochromatic emulsion can be developed by the aid of a coloured safelight; the photographic images therefore can be examined during the course of development. The accepted method of developing roll films is in a safety tank, which makes it possible to carry through both the development and the subsequent washing without handling the sensitive material at all When the latent image on the film has been developed, it is washed for a few minutes and 'fixed' by being passed through a 'hypo' bath (hyposulphite of soda). After the developed image has been in the fixing bath for a few minutes, the film can be examined in an ordinary strong light.

The final operation in the production of a finished photograph is the printing of the negative on to a light-sensitive paper, generally known as bromide paper, because it is coated with an emulsion principally composed of silver bromide. There are two ways of producing a bromide print –either by direct contact or by enlargement. A direct contact print is obtained by placing the photographic negative in contact with the coated side of the paper. The negative is then exposed to light, which passes through it to the coated paper behind, causing chemical changes in the coating. For enlarging, the negative image is projected on to the bromide paper by transmitting light through a lens, which focuses the image to the desired size. In both es the bromide paper has to be developed in

the same way as a negative, the image being quite invisible or latent until the chemical change is brought about by the developer.

The advent of the miniature camera, such as the Leica, with its precision lens and automatic focusing, has increased the use of the enlarging method of print production with interesting results. The miniature camera produces a negative which is no larger than 1 inch × 1½ inch, and is known as the 35 millimetre camera. Contact prints from these negatives would be quite useless for general purposes, but with the technical development of the fine-grain film and enlarging technique, excellent prints can be obtained in large sizes.

5. COLOUR PHOTOGRAPHY. The future of modern photographic advancement appears to be in the production of prints in colour. Already photographic transparencies are made by development of the exposed film and its chemical conversion into the finished article. Sensitive film is now manufactured under proprietary names, and the purchase price of the film includes the cost of processing. Therefore a photographer can load a camera with this colour-sensitive film, and after exposing and processing it, can have the pleasure of viewing by transmitted light the photographic subject in natural colours. A number of processes have been developed to bring the colour print into general use, and although these methods were at first experimental, it is probable that in time colour photography will take the place of black-and-white for the amateur photographer.

See also CINEMATOGRAPHY.

See also Vol. VII: PHOTOGRAPHY, HISTORY OF ; PROCESS REPRODUCTION.

PIANO, see KEYBOARD INSTRUMENTS.

PIANOLA, see PLAYER PIANO.

PICCOLO, see WOOD-WIND INSTRUMENTS.

PIERROTS, see CLOWNS; HARLEQUINADE AND PANTOMIME.

PIGEON RACING. The pigeon that races and can 'home' from long distances is not the ordinary wild PIGEON (q.v. Vol. II): it is now a thoroughbred, whose pedigree is carefully recorded by British fanciers, and which originally evolved from many varieties of pigeons. Every

racing pigeon has fixed on its leg before it is 8 days old a metal ring, which is its identity disk for life.

Although homing pigeons have been known in this country since early in the 18th century and have been used for message work for many years (see PIGEON POST, Vol. IV), and although many matches over distances of a few miles are recorded, it was not till about 1870 that the sport of long-distance pigeon racing was first established. Long-distance races vary from 50 to 500 or 600 miles. The first big race was organized by W. B. Tegetmeier from the Crystal Palace in 1871. The Old United Counties Club (in some of whose events King George V, as Duke of York, competed) was founded in about 1880, and organized some of the earliest races to France, the route being Dover—Amiens—Paris—Rheims. King George V gave five challenge cups which are flown for annually in five different races in Britain. The growth of the sport may be estimated from the fact that nowadays the London North Road Federation alone sends several thousand pigeons to each race.

The winner of a race is the bird flying at the fastest average speed. On the 'marking night', as it is called, the competitors are taken to the club headquarters or other central place, and a rubber ring is placed on each leg. This rubber ring has an external and internal ring number, which are also entered on a paper counterfoil. The external number is noted on the 'race sheet' which contains details of each bird's colour, sex, and metal ring number. Each owner has a separate race sheet, and when all his birds have been 'marked' by the Ringing Committee, his counterfoils and race sheet are sealed in an envelope. The birds are then sent to the race point, usually in charge of a convoyer, who releases them all together and sends a telegram stating the time of release. In order to ensure that the birds have every chance, organizers of the long distance races have special weather forecasts prepared by the Air Ministry. When a bird arrives home, the rubber ring is removed and placed in a special recording clock which is then struck, showing the hour, minute, and second of the bird's arrival. As the distance of each owner's 'loft', or pigeon house, from the race point has been separately calculated, the average speed is easily obtained. This is calculated in yards and decimal fractions of yards, and is called the pigeon's 'velocity'.

The speed of pigeons varies with the wind and weather, birds with a following wind naturally making faster pace than those facing a head wind. The fastest speed recorded is 93 miles 960 yards an hour, made by a pigeon belonging to H. Mussen of Belfast, in a race of 80 miles.

The best way to start pigeon-racing is probably to purchase a pair of stock birds, breed from them, and race the young birds. For some reason or other home-bred young birds seem to do better than those imported as 'squeakers' (that is about 6 weeks old) before they can fly. Pigeons are generally mated about the middle of March because feeding and rearing young has an effect on the moult, and mating at this time means a good 'wing' for the long races in July. Pigeons lay two eggs, the first about 8 days after mating, and the second some 42 hours afterwards. They take 18 days to hatch. The young pigeons, which are completely helpless and blind for the first week or so, are fed on a milky secretion in the adult bird's crop, sometimes called 'pigeon's milk', and then on soft food pumped into them by both parents. At about 21 days they should be weaned, and can
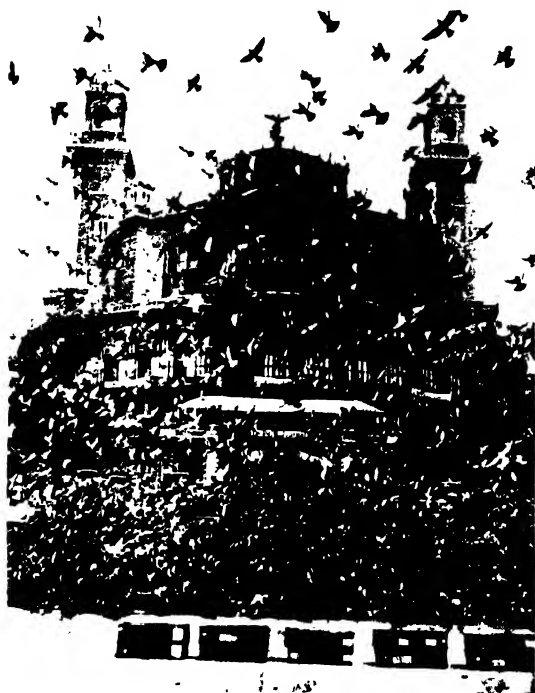
THE START OF A PIGEON RACE IN PARIS
The pigeons have been released from the baskets in the foreground. *New York Times*

be put on the roof of the loft or pigeon house in a basket to learn their surroundings: after a little while they will begin to fly freely round the loft. At 12 weeks training can begin by progressive stages of 1, 2, 5 to 10, 20, 30 miles' flight—up to a maximum of 50 miles or so. Then the birds will be ready to be entered for their first race. Young bird races up to 300 or 400 miles are organized; but generally 80 to 100 miles is considered sufficient.

Once they have been over the course, the adult birds do not need so much progressive training— a few trials at 10, 20, 30, or 40 miles are all that is needed—but they have to be watched to see they do not go stale. If they arrive from a race distressed, they must be nursed back to fitness by rest and food.

The main requirements in housing pigeons are plenty of light and air, each bird requiring about 28 cubic feet of space. Many methods of trapping are adopted; open doors, open fronts of lofts, drop holes, or bob wires—but this is a matter of individual preference. Feeding is not expensive, as the racing pigeon requires only 1½ ounces of food a day. Maple peas are perhaps the most popular food, although beans and tares are also used. Sometimes a little canary or similar seed is useful to encourage the birds into the traps.

PIG-STICKING. This sport, practised mainly in India, is the pursuit of boars by mounted huntsmen armed with spears. In early days huntsmen carried a throwing spear and used it like a javelin; but to-day a 5-foot 'jobbing' or thrusting spear is used. It is generally accepted that the modern sport of pig-sticking grew out of the practice of bear hunting, which flourished in India in the 18th century. As bears became more scarce, sportsmen turned their attention to wild boar; and in the early part of the last century the first Tent Clubs were formed in various parts of India by army officers and English residents. Tent Clubs fulfil the same function in pig-sticking as Hunts do in relation to Fox Hunting (q.v.) in Great Britain. But the unusual thing about pig-sticking is that it is one of the only forms of hunting which has developed into a competitive sport. Of all the many pig-sticking competitions held in India the most celebrated is undoubtedly the Kadir Cup, which was instituted by the Meerut Tent Club in 1869.

PIG-STICKING IN INDIA
From a 19th-century engraving   *Parker Gallery*

The procedure at a Tent Club meeting is as follows. The Secretary, who is the equivalent of a Master of Foxhounds, divides the competitors into 'heats' of three or four 'spears'. If the country is fairly open, a line of beaters is then sent out, and the heats follow the line, each heat being separated from the next by an interval of up to half a mile. If the country is enclosed, beaters are sent into the undergrowth, while the heats wait outside the cover. As soon as a pig is raised, the nearest heat sets off in pursuit. Under the rules of pig-sticking, the other heats are not allowed to join in, even if the pig passes close to them. The first rider to get a thrust home into the pig with his spear wins the distinction of being 'First Spear', and is eventually rewarded with the pig's head and tushes (tusks) after the animal has been killed.

Wild pigs travel very fast over a distance of a mile or more, and it is therefore essential that pig-stickers should be well mounted. Horses must be sure-footed, and capable of galloping over broken ground. They must also be exceptionally hardy and staunch, for the wild pig is brave and, if wounded and cornered, a dangerous animal. When it is too exhausted to run any farther, it will turn and charge its pursuers, and it is then that the pig-sticker requires all his skill and horsemanship.

See also Vol. II: SWINE.

PING-PONG, *see* TABLE TENNIS.

PIPE AND TABOR, *see* DANCE BANDS.

PIPES AND PIPE-MAKING. The simple wooden pipe in which finger holes were cut was one of the earliest instruments to be invented (see MUSICAL INSTRUMENTS, HISTORY OF). From these pipes have developed the modern WOOD-WIND INSTRUMENTS (q.v.) with their complicated mechanism.

The making of the simple wooden pipe is a popular pastime to-day, and in schools pipe-making and pipe-playing are common activities. Simple pipes can be made from a variety of material, bamboo cane being the most usual. There are many different varieties, the tin whistle design being the most popular (see RECORDERS). The cane is cleaned and cut into varying lengths, the lengths determining the lowest note that can be played. Pipes are usually between 9 inches and 2 feet long. A mouthpiece is made at one end by cutting a channel down the pipe and inserting a shaped cork. The channel ends at a hole, at the far end of which is a flanged edge. When the pipe is blown, the air vibrates alternately above and below the flange, and this sets up corresponding vibrations in the column of air in the tube, and so produces the sound. The pitch of the note is varied by means of holes bored in the side of the tube. The position of these holes is usually fixed by experiment. Six holes for three fingers of each hand is the usual number, although there may be also a hole—the octave hole—which can be covered by the thumb on the opposite side of the tube.

Pipes can be made in many other shapes and designs—the pan-pipes, for example, which consist of sets of tuned pipes without finger holes, bound together; or reed-pipes which have single or double vibrating reeds to act as the vibrating mechanisms (see REED ORGANS); or flutes in which the sound is produced by transverse blowing, that is to say blowing from the side of the instrument.

See also MUSICAL INSTRUMENTS.

PIQUET, see CARD GAMES.

PISTOL SHOOTING. Pistols were invented about 1540 by Caminelleo Vitelli of Pistoia, from which they took their name. Their value was soon recognized as small firearms used for quick shooting and personal protection at close quarters. Originally they were muzzle loaded, and were made with a single or double barrel. Later,

COMPETITORS FROM THE U.S.A. IN THE RAPID FIRE PISTOL-SHOOTING EVENT AT BISLEY, DURING THE OLYMPIC GAMES, 1948   *Olympic Photo Association*

revolvers were invented, in which six cartridges were held in a circular drum, so that a man could fire six shots before reloading. On much later revolvers a fresh cartridge was turned into position when the trigger was pressed or the hammer pulled back. In automatic pistols the loading and cocking are done automatically with the firing of each shot.

In the 18th and 19th centuries pistols were used as weapons for fighting duels, special pairs being often kept for the purpose (see WEAPONS, Vol. X). The revolver or 'six-shooter' was the favourite weapon of the American cowboys; and Colonel Cody (Buffalo Bill) used to shoot bison with a revolver, by riding alongside the animal before firing.

Pistol shooting at targets is a popular sport, and is included in the OLYMPIC GAMES (q.v.), where there are events for deliberate fire at different distances, and an exciting rapid-fire event in which series of five shots have to be fired in eight, six, and four seconds. In England pistol shooting is organized by the National Rifle Association, which deals with the full bore pistol of 0·32 to 0·455-inch calibre, and the National Small-Bore Rifle Association, which controls the 0·22-inch calibre pistol.

In learning to shoot, the beginner will find an

air pistol a good weapon, provided that he gets one with a nice trigger pull: it is very accurate at short range and the ammunition is cheap. He can then go on to a 0·22-inch single-shot pistol, and finally, the 0·22-inch automatic or revolver which will give practice in 'rapid fire'. He should start at very short ranges, 2 or 3 yards only, and use a target that will catch all the shots—there is no fun in continually missing. The three elements in target shooting are holding, aiming, and let-off. The secret of steady holding is to have a firm hold of the pistol, but not so tense as to make it quiver. A rest should be used at first when firing, but holding the unloaded pistol without one should also be practised. There are two points about aiming: first, to get the fore-sight in the exact centre of the notch of the back-sight, and to keep the tip of it level with the top of the backsight; secondly, always to aim at exactly the same point on the target. The trigger should be squeezed carefully so that the aim is not disturbed. This can be practised with an empty pistol (but not with an air pistol), and it is called 'dry shooting'. All the best shots practise in this way. Shooting with each hand ought to be practised equally.

A good shot is a safe shot, and there are certain habits that must be formed by anyone who does not want to be a danger to others. An air-rifle pellet will carry 100 yards, and the 0·22-inch is dangerous at a mile. The bullet will bounce off hard surfaces like stones and tree trunks, so it is important always to shoot into something soft. The gun should never be pointed at anyone, even in fun. When the gun is picked up, it should always be opened to see whether it is loaded; in the case of an automatic it is not enough to take out the magazine; there is a round in the chamber too, and the slide must be pulled back to eject this. When at the firing point, the muzzle should be kept pointing towards the target, especially when loading and unloading.

See also RIFLE SHOOTING.

PLANCHETTE, *see* FORTUNE-TELLING.

PLAYER-PIANO (PIANOLA). Attempts to play piano music by mechanical means were common from the early 19th century. The pianola was patented by an American, E. S. Vatey, in 1897. This early pianola was separate from the piano, and was attached to it when required.

The modern pianola is the same in principle, though it is now always built into the instrument. The name pianola is in fact the trade name given to the instrument manufactured by one particular firm, though it is often used for player-pianos in general.

By the use of foot bellows a perforated roll of paper is passed over a cylinder which is furnished with small holes. Each aperture of the cylinder is connected to a hammer, which is set in action by wind from the apertures, and strikes the strings. Most of the standard piano com-positions have been arranged on such rolls. Levers attached to the woodwork of the key-board can be operated to produce differences of expression, and when controlled by a skilful player, the mechanical reproduction of music, although not equal to a performance by a first-rate pianist, is very good.

See also KEYBOARD INSTRUMENTS.

PLAYING CARDS. No one knows for certain when or where playing cards originated. One story is that they were invented at the French court in the 14th century to amuse the mad King Charles VI, and another that the great Italian artist and scientist, Leonardo da Vinci, invented them. There is even a legend that they were an invention of the devil. Another theory is that they were brought to Europe from the East by the Crusaders, or by wandering gypsy fortune-tellers. There is no evidence for any of these stories, but it does seem probable that cards originated in the East, probably in China. Cards are numbered rather like DOMINOES, and the Kings, Queens, and Jacks are not unlike some of the characters used in CHESS (qq.v.). We know that games like dominoes and chess were played in the East, and also that Persians, Indians, and Chinese used playing tablets or disks as early as the 12th century, which were sometimes arranged in 'suits', showing royalties, rulers, and various emblems.

European cards have not changed much since the 15th century, and apart from slight differ-ences, the pack is similar in all the countries of Europe. It consists of fifty-two cards, divided into four suits of thirteen cards each. Each suit has an ace (from Latin *as*, a unit) which is the number 1—though in most card games it counts the highest. Each suit also has nine cards numbered from 2 to 10, and three picture or 'court cards'. These were originally called

'coat cards', because 'they showed clothed or coated figures; but this became corrupted to 'court'—because they were all royal characters. They are the Jack, or Knave (number 11), the Queen (number 12), and the King (number 13). The English pack also includes a Joker, an extra unnumbered card, used in some games to represent any card of the player's choice, but not used at all in many such games as BRIDGE or WHIST (qq.v.).

The first European cards of which we have any record were Italian in design, and were called 'tarots'. They were played with at the French court in the 14th century, and were evidently hand-painted. The pack was much larger than our own, including about seventy-eight cards, or sometimes more. Part of the pack was very like a modern pack, consisting of fifty-six cards arranged in four suits of fourteen each, numbered in the same way, except that a Knight, as well as a King, Queen, and Jack (or Valet) was included among the court cards. The suits were called Cups, Swords, Money, and Batons (Clubs). The rest of the pack was composed of a series of emblematic pictures called *atouts* or 'tarots', which name was also used for the whole pack. These pictures represented various aspects of life, and were drawn from legend and folklore, the meaning of most of them now being lost to us. The Devil

THE KING OF BATONS (CLUBS)

A card from an engraved pack of the late 15th or early 16th century, showing the Italian suit signs

was included, and there were emblematic pictures of Death, the Sun, the Moon, and so on. There was also an extra unnumbered card called *Le Fou* (the fool), clearly the ancestor of our Joker. The game played with these cards was called *tarocchi*. The emblem cards or tarots were evidently the original trumps, for they always had a special power over the other cards.

It is likely, but not certain, that our present simpler pack was derived from this tarot pack. It is thought, however, that the numbered cards may have existed separately from the emblem pictures, which were probably originally fortune-telling cards, and that the two were joined together for certain games. In this case a simple four-suit pack like our own possibly existed even before the complicated tarot pack, and the tarots may have been no more than an influence upon our own. Although rare, tarot cards are still played with in Hungary, Italy, and parts of France.

Sometime before, or during the 15th century, the French card pack seems to have been thoroughly reorganized—exactly why, we do not know—and shortly after this, playing cards were introduced into England from France. There is a tradition that a French knight, La Hire, a follower of Joan of Arc, was responsible for these reforms, and that he also invented the game of piquet. The main change was in the suit signs: Cups were replaced by Hearts, Swords by Pikes, Money by Squares or Diamonds, and Clubs or Batons by Trefoils (from the fact that they were drawn rather like clover leaves). In the English pack the old name of Clubs was retained, and the swords became Spades, probably because the symbol looked rather like a spade, and the Spanish word for swords (*espadas*) was, perhaps, picked up from Spaniards at the English court and confused with Spades. In such countries as Spain and Italy the old tarot names for the suits were retained, and in Germany they were changed to Hearts, Acorns (Spades), Bells (diamonds), and Leaves (clubs), which seem to be derived from the shapes of the symbols.

When the suit signs were changed, the pack also became smaller, the old tarot cards being dropped and the fourth picture card, the Knight, being left out. Since then no change has been made in the composition of the pack, and the court cards of the modern pack are still clad in the costume of Henry VII's reign. Piquet packs,
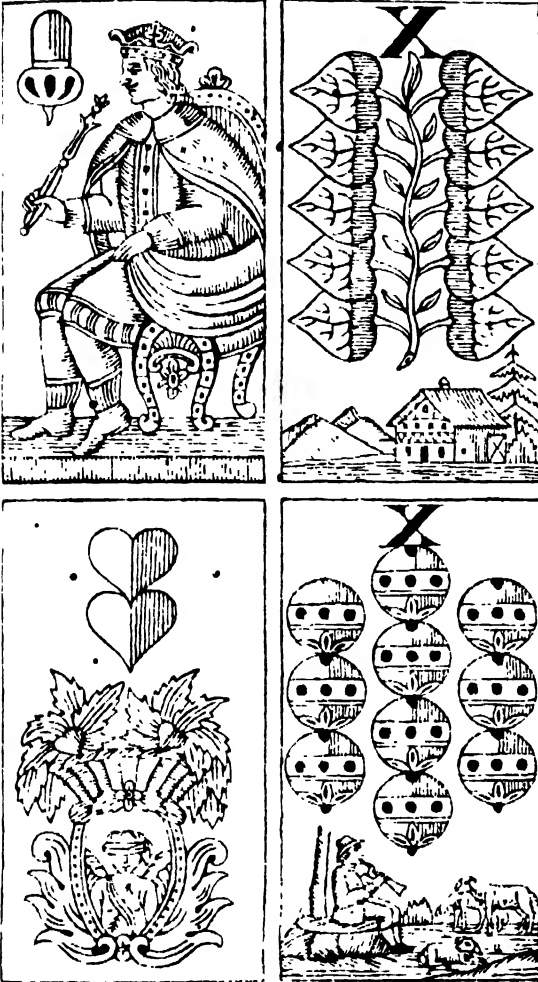
GERMAN PLAYING-CARDS OF THE 18TH CENTURY
These show the King of Acorns, the 10 of Leaves, the 2 of
Hearts, and the 10 of Bells

including no cards under a 7, were specially
made, and were particularly popular on the
continent in the 18th century when taxes were
levied according to the number of cards in a
pack. Piquet packs were used also for such games
as écarté and euchre.

As cards became more generally used, stencils
and later wood blocks replaced hand-painting,
and some changes took place in the design. The
design on English cards gradually became stan-
dardized, and now each of the court cards has
its own distinctive head, face, and costume, the
same in every pack. The double head, a marked
characteristic of these, was introduced in the

early 19th century for the sake of convenience,
so that when cards were laid on the table, they
looked the same way up to players on each side.
The little index pips at the corners, useful when
the cards are held fanwise in the hand, were
another later improvement. The ornamental
ace of spades, to be found in all English packs,
dates from the 18th century, when a duty was
levied on the actual cards (not on the wrapper
as now) and this ace was selected to bear the
Government stamp. The Joker, the descendant
of *Le Fou* of the tarot pack, had dropped out of
the 15th century pack, but has come back
recently by way of America, where he was used
in the game of euchre, which was taken to
America by French colonists. He plays an
important part in the game of POKER (q.v.).
There have been a great many novelty packs,
but the conventional pack of playing cards is
used for almost all the more important card
games (*see* COLOUR PLATE, op. page 112).

See also CARD GAMES.

PLAY PRODUCTION. In the theatre, the
term 'production' embraces all the arts and
crafts that combine to make a finished per-
formance. The players, scenic artist, and musi-
cians contribute their talents; the stage staff
bring their knowledge and skill on the technical
side. These make up a team which is led by the
producer, to whom all look to control, guide, and
balance their efforts.

The staff, apart from the players, needed for
a normal production in a theatre consists of
an experienced stage-manager, assistant stage-
manager, and call-boy, besides the wardrobe-
mistress and dressers, and all the technicians—
electrician, carpenter, fireman, property-master,
and scene-shifters. There may also be a stage-
director, who ranks next to the producer, and in
an elaborate production, more than one assistant
stage-manager.

The stage-director makes himself familiar with
the entire production, in order to take as much
as possible off the shoulders of the producer,
leaving him free to concentrate on the develop-
ment of the acting. He deputes responsibility
for the mass of detail to the right department.
The stage-manager during rehearsals is 'on the
book', that is, he is following the script, prompt-
ing the actors, and marking in every move and
cue for effects on the blank interleaves which are
left between every page of the prompt copy of

the play. The assistant stage-manager is a very hard-worked member of the staff. There is almost nothing he may not be called upon to do, from buying a parrot in a cage to organizing a realistic storm from a wind machine, an iron sheet, a bucket of water, some rice, and a piece of glass. The assistant stage-manager takes relief duty on the book, both at rehearsals and performances, as this needs great alertness and concentration. He is also responsible for setting and clearing the stage and directing the stage hands. Theatre lighting being very elaborate (*see* STAGE DESIGN), a highly qualified electrician is employed: indeed, it is illegal to use the full switch-board lighting unless he is in charge, sufficient light for rehearsals being obtained from a separate control. The electrician is given lighting plots by the producer to indicate where the focal points of interest will be, and where special lighting must be brought to bear. He needs also a precise picture of the sequence of lighting that will be required and dimensions and colourings. He then works out his own plot on squared paper, using combinations of light, from spot-lights in the front of the proscenium, from overhead battens, footlights, and perches (floodlights from the two down-stage corners), and movable standard lamps or strips of lamps. A lighting rehearsal is generally called shortly before the first dress rehearsal, at which all the lighting effects are tried out with the scenery, and the plots finally co-ordinated with the prompt book. The switch-board is usually built over the prompt corner, and is reached by a ladder on the side wall, so that the prompter can give warnings and cues by means of a cue light on the switch-board. The stage-carpenter makes all the paraphernalia that may be needed in a play, and which it would be quite impossible to buy. Dragons, rocks, caverns, banners, platforms to roll on and off the stage, trick doors—he has to be able to turn his hand to anything, and to make it work. He has always to use judgement in holding the balance between lightness in weight, for convenience in handling at speed, and good workmanship that will not let the actors down. In fact, he must not only be ingenious, but also first-class as a craftsman. Very few theatres nowadays have facilities for making and painting their own scenery on the spot. The Birmingham Repertory, a very small theatre, has its own workshops and paint frames; but the scenery for big theatres takes so much space

that this is not usually practical. Backcloths, 'flats', even doors and windows, are generally built to order by one of the big firms that specialize in this work. The property-master is always present at the side of the stage during performances. Properties or 'props', that is, all the small accessories used in the play, such as trays or books, are kept in the property room until a short time before the opening of the act in which they are used. The property-master makes his own lists, and act by act he puts the things out on a table near the entrance where they will be needed.

Four weeks is the usual time given to rehearsal for a first-class professional production. Many have to do with less, REPERTORY Companies (q.v.) often with much less. But less than four weeks' rehearsal, though it often produces surprisingly good results, is bound to result in a rather superficial and unfinished production. Nothing but financial necessity justifies it. It is, nevertheless, possible to over-rehearse a play and drag it out over too long a period, so that staleness sets in, and vital enthusiasm is lost. The usual working hours are from 10.30 a.m. till 5.30 p.m. with a midday break. Producers vary in the way they allot the time; but there is always a reading of the play first of all, when the producer outlines his ideas, and lays down the lines on which he wants the play developed. The actors thus have plenty of time to give a good deal of thought to their parts before the first rehearsal.

At the first rehearsal the producer gives the actors the dimensions in which they will play; he places substitutes of some kind for all the furniture they will have, and makes them walk through the opening scenes, marking in pencil all the moves given to them. The producer should have a clear picture in his mind before starting to rehearse, although he may find that he can improve on this very much as the acting develops. It is impossible to visualize fully the effect of a scene until it is actually rehearsed. So at the start the actors are given such key directions as seem essential and dramatically right, and from this basic conception, the shape and colour of the play is gradually built up. Early rehearsals are necessarily slow and heavy work, needing concentration and patience. At this stage it is usual to take each scene through twice in succession, to make sure that the foundations have been clearly understood. The producer

AN EARLY REHEARSAL
Members of the Birmingham Repertory Company rehearsing *The Boy David* by J. M. Barrie
The Birmingham Post and Mail

will take the cast right through the play in this way, so that all have a sense of the sequence of scenes and the proportions of the play as a whole.

After this, the actors begin to fit into place, and the drama begins to emerge. Instead of lay figures, living characters are speaking and moving. The dialogue begins to sparkle, argument develops force, and type reacts against type. The players are 'getting into the skin of the parts'. A wise producer uses, as far as possible, the contribution that his cast can bring in the way of creative imagination, fitting it into the scheme. Sometimes he will gain inspiration from an actor, and be able to develop with good effect an idea suggested by some poignant phrasing or striking gesture. But he will also have to prune and control the acting so as to keep true proportion. Minor points must not be over-emphasized; effects must be used with economy if they are to be telling; the pace of a scene must not be sacrificed to an overdose of comedy. Characterization must be consistent.

Once the technical lines have been smoothly set, it is usual to devote a long rehearsal to running right through the play to remind the cast of the proportions. After this, individual scenes are gone over again and again in detail. This is usually a time when everyone gets depressed. All know what they are striving for, and all are aware of how very far short of their mental picture their performance falls. Gradually, however, the whole play begins to take shape. Fresh enthusiasm enters into producer and cast, and increases at each rehearsal up to the production of the play —with the probable exception of the first dress rehearsal. As this is the first occasion when all the sides of the production are brought together, there is much that can go wrong. For this reason there should be at least three dress rehearsals, and as it is impossible to gauge the effects, especially of comedy, without an audience, it is usual to invite a small, carefully chosen number of friends to watch the final dress rehearsal, which should be run through without interruption just as at the performance.

See also ACTING; STAGE DESIGN.
See also Vol. XII: DRAMA.

PLEASURE CRUISING. When Drake returned to England from sailing round the world in his tiny ship, the *Golden Hind* (so tiny that she would fit comfortably between the *Queen Elizabeth*'s funnels), he certainly did not think of his voyage as a pleasure cruise, and would have

ORIENT LINE CRUISES
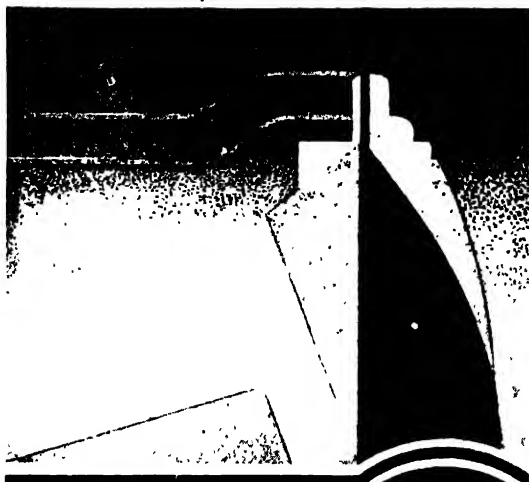
MEDITERRANEAN, ADRIATIC, CONSTANTINOPLE, PALESTINE, MADEIRA, CANARY ISLANDS.

THE COVER OF A SHIPPING LINE BROCHURE

found it hard to believe that one day people would encircle the globe in ships just for the enjoyment of the sea and the sights of strange lands.

Cruising in ships began when, for the sake of seeing the world, people started accompanying vessels engaged on regular trade-routes. Nothing was organized, and no shore excursions were arranged; but the traveller had his fill of sea air and visited whatever interesting ports of call the ship's route included. Shortly before the First World War some shipping companies began to realize that many more people would take advantage of such trips if the cruises were properly organized, and if a ship were detached from regular service for the purpose. It was not, however, until the early 1920's that modern pleasure cruising with its carefully planned itineraries really became established. The famous Cunarder *Mauretania* of 1907, for 22 years the fastest liner on the North Atlantic,

made a 6 weeks' cruise to the Mediterranean from New York in 1923. Year by year cruising gained favour among people who wanted a sea holiday which included visits to interesting places. Cruises were varied in length to suit all pockets, from a week-end to the Scottish lochs to a 6 months' world cruise. Among the most popular were the 14, 18, and 21 day cruises to the Mediterranean or Scandinavia. No detail was overlooked, and companies' agents in the ports organized transport to convey passengers to as many places of interest as possible during the ship's stay in a port, which was usually about 24 hours. Some cruising liners explored the Norwegian fjords, wending their way between great, sheer cliffs to drop anchor in the quiet, deep waters at the head of one of those fascinating inlets of the sea.

On the ship herself a variety of entertainments, such as dances, fancy-dress competitions, quiz programmes, and treasure-hunts with clues hidden all over the ship, were arranged for passengers. The great event of any cruising liner going south of the Equator is the famous 'crossing the line' ceremony, at which Neptune holds court to initiate into his kingdom all those 'landlubbers' who are crossing the line for the first time. With elaborate mock ceremony, the victims are lathered with soap and shaved with a wooden razor by Neptune's assistants; then they are ducked in a bath of water. Each victim is presented with a certificate explaining his initiation in grand language. This custom is believed to be very old, going back to the days before scientific navigation. It was then the custom to duck new apprentices every time important capes or islands were passed, to impress these landmarks on their minds. Later, it became associated with crossing the Equator, and adapted as an entertainment for passengers.

Cruising, a luxury type of travel, naturally takes some time to recover fully after a great world war. Many of the large passenger liners were sunk during the Second World War, and although new ships are gradually being built, all British ships, in particular, are so fully occupied in carrying peoples and commodities about the world that they cannot be spared for cruises from Britain. Also there are problems of money exchange and limitations on the amount of money which can be spent in foreign places. However, early in 1949, to assist in Britain's economic recovery by earning dollars, the

Cunard White Star Liner *Mauretania* was taken off her Atlantic route between Southampton and New York to make a series of South American cruises from New York. This idea was further developed when three of the Company's ships spent the early months of the year cruising from America. As the after effects of a world war are overcome, it should become possible again for more and more people to enjoy pleasure cruises with their variety of attractions.

See also Deck Games.

PLEASURE GROUNDS, *see* Fairs; Parks and Gardens.

POINT-TO-POINT RACES. It is recorded that in the year 1752, in the county of Cork, Ireland, a Mr. O'Callaghan challenged a Mr. Blake to a cross-country race on horseback 'from the church of Buttevant to the spire of St. Leger Church, a distance of $4\frac{1}{2}$ miles'. It soon became fashionable among hunting men to demonstrate the superiority of their own horses by challenging fellow sportsmen to similar races 'for a purse of sovereigns or a hogshead of wine'. These races usually started from a given point, and finished at some clearly definable landmark, such as a church spire or steeple; and consequently they came to be known as 'point-to-point steeplechases'.

Throughout the 19th century there was an increasing tendency for steeplechases and point-to-point races to become distinct and separate forms of sport. The purely 'steeplechasing' element gradually lost its informal character, and became absorbed into the realm of thoroughbred racing, and was conducted as a professional sport. Point-to-point races, however, have preserved their local character, and are held to-day by every Hunt in the British Isles at the close of the hunting-season. The original idea of a comparatively straight course between two fixed points proved unsatisfactory from the spectators' point of view: as a result of this, and because of the wide popularity of point-to-point races, courses are now usually laid out on a circular or triangular basis, with properly constructed jumps or 'fences'. There has been, however, no departure from the original rule of point-to-point races—namely, that they should be run 'over a fair hunting country'.

Point-to-points are run under an amateur code of rules. Only bona-fide hunters which have been regularly hunted during the past season may be entered. They may be ridden either by the owner or (in nomination races) by his or her nominee. In the early days of point-to-points no distinction was made in the weights which horses had to carry, since the races were designed as a test of the stamina and endurance of hunters.

THE POINT-TO-POINT OF THE LORD LECONFIELD HUNT AT PETWORTH, SUSSEX, 1937
The first fence in the Masters' Nomination Race
W. W. Rouch & Co.

To-day, however, entries are sometimes divided into welter-weights (horses carrying 13 stone and upwards) and light-weights (horses carrying less than 13 stone). A typical point-to-point 'card' includes such events as a Nomination Race, Farmers' Race, Novices' Race, Ladies' Race, and Adjacent Hunts Race, the latter being open, as its name implies, to members of neighbouring Hunts.

See also HORSE-RACING; HUNTING, HISTORY OF; RIDING.

POKER is very popular throughout the English-speaking world, especially in the United States of America, where it is sometimes written of as 'The Great American Game'. Poker clubs have published their proceedings as if they were learned societies, and whole volumes of stories exist about 'poker schools'. Some of the terms of the game have spread into more general use in cards, and some, such as 'four-flusher', meaning a player who cheats in declaring his hand, into colloquial speech.

The origins of the game are obscure; the first known reference to it is in 1834, but it probably developed from Brag, about which a ballad exists published in 1730, and which was described by Hoyle. our first authority on cards, in 1751. Like many much older games, poker is based on the laws of chance, success depending upon a knowledge of the odds against any one of the five-card hands turning up, and on the ability to avoid betting against odds that are too heavy. Habitual players discount the value of bluff, which may reveal their hands to their opponents, and prefer to maintain a 'poker-face', completely devoid of any tell-tale expression.

The game is played with a normal pack of cards, by up to seven players. The dealer, A, gives each player five cards in turn; B, on the dealer's left, before looking at his cards, puts an agreed stake, called the 'ante', into the pool. All now look at their hands. C, on B's left, can retire from the game or stake at least twice the ante. The remaining players then choose in turn whether to 'come in' (by staking as much as the last man to bet), to raise the stake (by betting more up to an agreed limit), or to retire. B can now stake an amount equal to that by which the last man to bet exceeded his necessary ante, or he can 'raise' and stake more, or he can retire and forfeit his ante. The remaining players have the same choice, until the bets of all those who remain in play are equal.

The players now throw away as many cards as they wish and receive in turn the same number of fresh cards from the pack. Once again the ante-man, B, either stakes or retires, and in turn the remaining players either equal the previous bet and 'see' the better, raise it, or retire. So play goes on. Finally, either all the players except one will have retired, in which case he takes the pool without showing his hand; or several players remain with equal bets in the pool waiting to 'see' each other; they show their hands and the highest wins.

Hands rank as follows: Straight flush: 5 of the same suit in sequence. Fours: for example, 4 jacks, 1 odd card. Full House: for example, 3 kings, 2 fives. Flush: 5 of the same suit, not in sequence. Straight: 5 cards, of any suit, in sequence. Threes: for example, 3 eights, 2 odd cards. Two pairs: for example, 2 aces, 2 fours, 1 odd card. One pair, and 3 odd cards. There are many different versions of the standard game of draw poker described; in particular, jokers or other cards may be declared 'wild' and represent any rank or suit.

See also CARD GAMES; PLAYING CARDS.

POLE VAULT, see ATHLETICS, FIELD EVENTS.

POLKA, see BALLROOM-DANCING.

POLO. 'At Shighur I first saw the game of the Chaughan. . . . It is in fact hockey on horseback.' Thus wrote a traveller in Kashmir in the year 1842. But the first reference to *chaughan*, meaning 'a stick or mallet', occurs in a Persian manuscript of 525 B.C., and it is from this primitive game that modern polo has been developed. Even if the refinement of a code of rules has been added to the modern game, early Persian paintings prove quite clearly that the equipment used to-day differs hardly at all from that used by the ancient Persians. It is probably true to say, therefore, that polo is the oldest surviving stick-and-ball game. Its name is probably derived from the Tibetan word *pulu*, a ball.

From Persia the game spread eastwards to Kashmir, Tibet, and China, and westwards to Egypt and Turkey; but, as with many mounted sports, it was in India that polo was first really developed. In 1862 the game was taken up by British Army officers stationed there, and was eventually brought to England by the 10th

POLO-PLAYERS IN THE PATRIOTIC CUP BETWEEN ENGLAND
AND IRELAND AT HURLINGHAM, 1923
The player on the right is just making a back-hand stroke
W. W. Rouch & Co.

Hussars. The first recorded match in this country was played at Hounslow with the aid of improvised sticks and a billiards ball. The game was taken up enthusiastically, and shortly afterwards, in 1874, a governing body, known as the Hurlingham Club, was formed, which laid down the first code of rules. They were redrafted by an international committee in 1921.

The rules of polo require that the game shall be played on a ground measuring not less than 250 yards in length by 200 yards in width, if the sides are unboarded, or 160 yards in width if boarded. A typical ground, such as the former Hurlingham ground, measures 300 yards by 185 yards. It is the practice in this country to have 11-inch boards along each side of the ground in order to keep the ball in play. At either end of the ground are two goal-posts 8 yards wide.

A game consists of seven periods, or 'chukkers', each of 8 minutes, with an interval of 3 minutes between each, to allow players to rest their ponies or, if necessary, to change them. The ball is made of willow wood, measuring 3¼ inches in diameter, rather larger than a cricket ball; while a typical stick weighs about 18 ounces and consists of a handle approximately 54 inches long, with a 9-inch, mallet-shaped head.

The game is played between two teams of four players each, numbered from 1 to 4. Numbers 1 and 2 are the forwards, Number 3

is the half-back, and Number 4, who acts as a kind of pivot for his team, is the back. Number 4, while primarily a defender, must always be ready to turn from defence to attack. His function is to keep the ball well up-field, to take long shots at goal, and, whenever possible, to make a 'run'. One of his chief preoccupations is to rid himself of the attentions of the opposing Number 1, whose task is to harass him as much as possible and to shut him out of the game. The rules of the game permit obstruction and 'riding-off', provided that, in the view of the umpire, these do not constitute dangerous play. The functions of Number 3 are to give the maximum protection to his own back, to keep track of the opposing Number 2, and to be ready to take his own back's place if the latter should take the ball up-field. Number 2 is the most important member of the team, with a roving commission and a purely attacking role. At the start of the game, the ball is placed in the centre of the field, and the players line up, each team behind its own goal-posts. When the flag is dropped, the forwards of each side gallop to the centre to try to secure the ball. Should a player break a stick, as often happens, he must himself gallop to the appointed place to obtain a new one; if he drops his stick, he must recover it himself without help —and he must not touch the ball while dismounted

In the early days of polo it was normal for players to be mounted on very small ponies measuring little more than 12 hands. As the game grew in popularity in Army circles, officers used their own chargers; this practice continued in England until the Hurlingham Club laid down that ponies should not exceed 14.2 hands. This height restriction was abolished in 1916, and it is now generally accepted that a high-quality polo pony should be a thoroughbred animal of about 15 hands. The qualities required of a pony are that it should be robust and courageous; it must be exceptionally handy— capable of turning suddenly, pulling up from a gallop, and starting off at a gallop again; it must answer instantaneously to the rider's signals and must be capable of swerving to the left or right at a canter. A really good pony thoroughly enjoys the game and learns to know what will be expected of him.

See also HORSES; RIDING.

PONIES, *see* HORSES; PONY CLUB; RIDING.
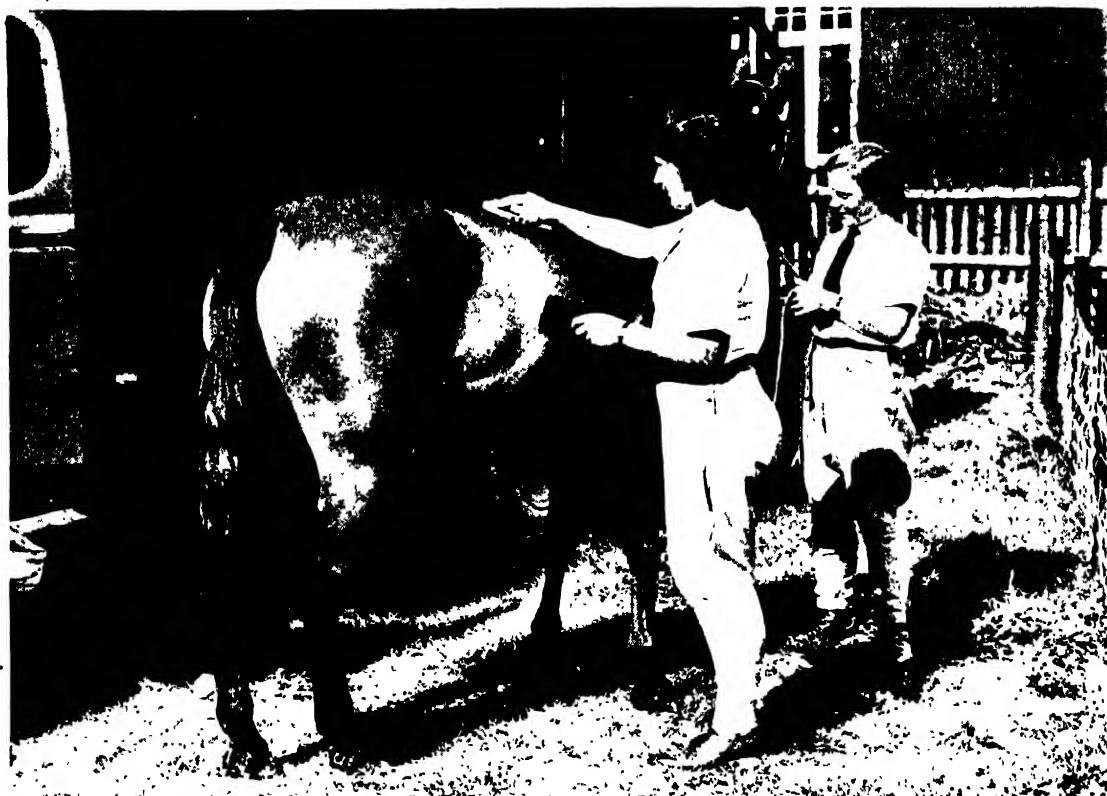
A PONY BEING PREPARED FOR THE RING AT THE ASHFORD VALLEY HUNT PONY CLUB'S SHOW, AT BENENDEN, KENT, 1948
Sport and General

PONY CLUB. In 1929 this Club was founded by the Institute of the Horse. When, in 1947, the Institute was incorporated into the newly formed British Horse Society, the Society remained as the parent body of the Club.

The official object of the Club is 'to encourage young people to ride and enjoy all kinds of sport connected with horses and riding, to instil in them the proper care of their animals, and to offer them the opportunity of receiving instruction of a higher class and on more orthodox lines than many of them can obtain individually'. All boys and girls who are under 17 years of age are eligible for membership, and those between 17 and 21 may become associates. There are altogether more than 20,000 members.

The Club is divided into some 200 branches in England, Scotland, Wales, and Ireland. As far as possible the area of a branch is the same as that of a 'country' hunted by a pack of fox-hounds, although branches are also formed in non-hunting areas. Branches of the Pony Club

thrive in Australia, New Zealand, South Africa, Kenya, Canada, and the United States of America. In charge of each branch is a District Commissioner, who is an official of the British Horse Society, and who is also a member of the Local Committee of the branch concerned. There is also a Pony Club Organization Committee, which is in the control of the British Horse Society.

The Club has many activities, of which the most important is the Working Rally. At these functions emphasis is laid on instruction, as much for backward children and beginners as for more experienced riders. There are lessons in jumping and riding, followed by mounted games and sports. Members and associates are invited to enter for the Pony Club tests, which are four, graded in difficulty, and for which Efficiency Certificates are awarded. These tests vary from time to time; but in general they consist of moderately searching demands as to the knowledge and practice of equitation and horse-

mastership. Apart from these examinations there are three tests known as the 'best-trained pony tests', in which pony and rider are required to perform elementary school movements. At the Pony Club camps instruction is given, among other matters, in the care of the horse in the open.

Competitions, open to members of the Club, are frequently held at County and local shows. In the hunting season, members, who have learned much from the instruction given by Masters of Hounds at specially arranged children's meets, assist in such matters as closing gates, and reporting damaged fences, straying stock, and any other mishap. Although much pleasure, in the way of GYMKHANAS (q.v.), hunter trials, and show jumping, comes the way of the members of the Club, its underlying and essential motive is to give sound instruction in all branches of equitation and horsemastership, by means of mounted lessons, films, and lectures.

See also RIDING; HORSES; FOX HUNTING.

POODLE, see DOGS, BREEDS OF, Section 5.

PRIZE FIGHTING, see BOXING, HISTORY OF.

PROMENADE CONCERTS, see CONCERTS.

'PUB' GAMES. Even to-day the bar of the local inn is a kind of club and sometimes the only place of recreation for many countrymen. This was even more so 50 years ago, and for many centuries before that. Before the cinema and the radio, and before the local bus services started, a man who wanted entertainment after his day's work could find it only at his local inn. Small wonder then that games were invented or improvised to pass the hours from sundown to bedtime. Some of these games have disappeared; some are fast disappearing. A few of them have grown in popularity, and have been taken up by people who do not go to 'pubs' at all, even to the extent of international contests.

There are now two kinds of games played in 'pubs': games which were adopted from outside, and games which have been invented in the bar itself. Of the former kind are all CARD GAMES, some of which are older than English history, and CHESS, DRAUGHTS, and DOMINOES (qq.v.). Card games are played with great vigour and enthusiasm—and you may often see old and greasy cards banged down triumphantly on the table during a hand at Nap. Draughts is sometimes seen; but as it is a game for two, and not a round game in which a number of men can join with the good-fellowship proper to the place, it is not universally popular. In some parts of the British Isles, particularly in the border country, Dominoes is the principal game.

But it is the other games, those improvised in the 'pubs' themselves, which are the most interesting. At present DARTS (q.v.), has outstripped

A GAME OF TABLE SKITTLES IN A LOCAL 'PUB'. *Sport and General*

them all. It is not as old as 'Shove-Ha'Penny' or 'Shuffle-Board'; but it has almost ousted this from its place before the inn fire. No one can say where or when it was first played, but it probably originated in the throwing of some primitive home-made darts at the round end of a beer-barrel. Shove Ha'Penny, or 'Shove Groats' as it was earlier called, was such a favourite pastime with the legal 'Gentlemen of the Temple' in Henry VIII's time, and they wasted so much time and money on it, that a law was passed against their playing it. It is easy to guess how the game started: men would take bets with one another on the accuracy with which they could give a push with the open hand to a coin, the tip of which had been placed just over the edge of the table. Now it has become standardized, with a board made of very smooth wood or slate, divided into cross-strips, into each of which the player must push his coin from the bottom edge. He has to 'fill' each division of the board—that is to say, get three disks cleanly into each, so that their rims do not cut the boundary line. If he puts a coin into a division which he has already filled, but in which his opponent wants a score, it is chalked up to the opponent. It is a highly skilled and most exciting contest.

Another fine old 'pub' game is 'Daddlums'. This consists in throwing across the room a round disk of wood called the 'cheese', which is aimed at ninepins standing on the table with a 'collar' behind them. Daddlums is becoming rare now; but a much more modern and elementary form of it called 'Table Skittles' may still be seen, particularly in the West Country. In this the ninepins stand at one end of a table, and at the other—the thrower's end—is a vertical rod, to the top of which is attached a string with a ball. The player must throw the ball and string with a swinging motion to knock over the ninepins—if possible all of them in his three throws. Another ninepin game, SKITTLES (q.v.) is also now vanishing, because the long, specially built alleys which accommodate it have been found to serve more profitable purposes as garages or dance-halls, or even as kennels for racing grey-hounds. But a few skittle-alleys remain in Gloucestershire and Worcestershire.

In many rural inns 'Quoits' is still a favourite game, though this is now more popular among DECK GAMES (q.v.) on board ship. There is a central spike, with an inner and an outer pan

about it, and the player throws four quoits. The spike counts five, the inner pan two, the outer one: and a game consists of 'once round the peg-board'. 'Rings' is played by throwing rings over hooks on a diamond-shaped board hung on the wall, each hook having its appropriate number value. 'Ring the Bull', a very ancient pastime which is fast disappearing, consists of swinging a ring on a cord in such a way that it will drop over a hook on a high beam, the player having ten shots a turn.

These games have only traditional rules—no governing bodies, no conventions or complexities, no squabbling over players, no bribery, no colours, no newspaper controversies. There is little spite or jealousy in them, and the only gambling lies in the glass of beer which the loser buys for the winner. It is the games themselves which are worth while.

PUNCH AND JUDY. The red and white striped box of the Punch and Judy stage is still familiar and popular at the seaside and at fairs. With his squeaky voice, hump back, and hook nose, Punch has, for many centuries and in many countries, beaten his wife, thrown his baby out of the window, and killed the hangman. Indeed, his is so old a story that no one can be quite certain when or where he first appeared. Among the comic masks worn by Roman actors was one which had his typical build and features, and he may have been one of the clown figures associated with the popular Roman comedians Maccus and Bucco. His name may come from the late-Latin term *pullicenus*, meaning chicken, used for the arrogant, 'strutting cock' type of Roman comic character. But his history is not continuous from Roman times, and it is most probable that Punch as we know him developed, as did Harlequin and Columbine, from a character in the Italian Commedia dell' Arte (*see* HARLEQUINADE AND PANTOMIME). In the plays of this tradition there is the stock figure of the rogue and practical joker, and when the plays were presented in France in the 16th century Pulcinella, as he was then called, acquired the distinguishing features of the hook nose and hump back. His character was also changed from that of a country clown to the more malicious and satirical Polichinelle. He grew so popular that he became in France a wooden puppet, as well as a type for the living actor; and it was from France that he was first brought

A PUNCH AND JUDY SHOW
From an 18th-century coloured engraving

PUNTING. Punting a boat means propelling it with a long pole which is thrust against the river bed or bottom. It is sometimes used for manœuvring barges and other heavy craft in confined waters: on the Norfolk Broads, for instance, boatmen often propel their 'wherries' (sailing barges) for short distances, by 'quanting' with very long, heavy poles called 'quant-poles'. Punting, however, is primarily a recreation, carried on more than anywhere else on the River Thames from Teddington upwards to the Cherwell at Oxford, and also on the Cam at Cambridge. Punting requires water of a reasonably constant and not excessive depth, and a hard bottom —for if the pole becomes stuck in mud or weeds, the punter is liable either to lose it or to be dragged overboard.

to England. The puppet Punch had become a familiar figure in England by the 18th century, during which period he acquired a whole supporting cast of diminutive actors of both sexes ---kings, queens, waiting-maids, rope-dancers, geese, and many more. To-day the number of his companions has dwindled to his wife Judy, the Doctor, the Hangman (usually called Jack Ketch), and the taunting, bragging Scaramouche. The faithful Dog Toby is supposed to frighten away the devil with the bells on his frill.

None of these characters has so long and varied a history as Punch himself. Judy has apparently no predecessor in the Commedia dell' Arte, as have the Doctor and Scaramouche, but is the unchanging comic type of the nagging wife. Scaramouche, the braggart, makes his appearance in England in the late 17th century; the Hangman, Jack Ketch, was named after a famous and very clumsy public executioner who died in 1686. They are of little importance compared with Punch, and merely provide occasions for Punch's displays of temper and his ingenious escapes from punishment for his misdeeds, for which one cannot help but admire him, villain though he is.

See also PUPPETS; FAIRS; HARLEQUINADE AND PANTO-MIME.

A punt is a flat-bottomed boat without stem, keel, or stern-post; and the width at each end must be at least one-half the width at the widest point. It is, in fact, more or less square-ended. The average Thames pleasure punt is about 26 feet long, with a beam or breadth of about 3 feet; racing punts are usually about 2 feet longer and 1 foot narrower. The pole, which is usually made of spruce, is about 13 ft. 6 in. long and is tipped with a V-shaped metal fitting. To-day $1\frac{1}{4}$-inch outside diameter duralumin tubing is also used. The punter stands about three-quarters of the way towards the stern of the craft on the port or starboard side, and lets the pole slide through his hands until it touches the bottom. The angle at which he starts this movement is judged so as to bring the lower end just astern of him as it touches the bottom; therefore, when the 'shove' is started, the pole is approximately at an angle of 45° to the bottom and the punter. If his craft has 'way on', the punter thrusts the pole well forward to allow time for it to reach the bottom. He then thrusts astern with both arms, taking a step in the same direction with the right foot. At the end of a stroke, he pulls the pole forward almost hori-

zontally above the water, either gathering it hand over hand, or by a sharp jerk throwing it forward so that it slides through his fingers. As it comes up, the lower end is brought forward ready to re-enter the water at the correct angle, and at the same moment the feet are brought neatly together. As an alternative, he may 'walk the punt' by entering the pole near the bow and following it, pushing all the way, until he reaches the stern; but this is not considered good style.

Steering is probably the most difficult part of punting. If a punter wants to steer his craft to the left, he puts his pole into the water a foot or so away from the side of the boat, and, while making his stroke, draws the stern of the punt towards the pole, even allowing the pole to go slightly underneath the stern; but he must take care not to get the pole caught under the punt or he may be pulled out of the boat. If he wants to steer to the right, then during the stroke he pushes the stern slightly away from the pole. It is important not to get a 'swing' on the boat, as this is difficult to stop. A punt moving with the stream should always give way to one moving against it; but all punts, when poled, have the right of way over boats propelled by oars or other means.

There is an old print showing Thames watermen punt racing at Windsor in 1793, 'in honour of the Prince of Wales's Birth Day'. But as an amateur sport punting dates from the foundation of the Thames Punting Club in 1885, and the institution of the Amateur Championship in the following year. The world speed record for punting is 8·05 miles per hour. It was made in 1896 by T. B. Rixon, using a specially built racing punt, 34 ft. 4 in. long, only $14\frac{1}{2}$ in. wide, and weighing between 40 and 50 pounds. The Amateur Championship now takes place at the Bray Reach at Maidenhead on the last Saturday of August every year. The length of the course is $\frac{3}{4}$ mile. In 1949 the Professional Punting Championship was held over the same course.

PUPPETS. The word 'puppet' comes from the Italian *pupa*, meaning a doll; puppets are made to represent human beings or animals and, by being manipulated either with the finger or by strings, they are made to mime the actions of a play, to the accompaniment of dialogue, and often of music and other effects.

The puppet theatre was well known and highly developed in most of the ancient civilizations of the world. Little terra-cotta dolls with jointed limbs, some with rods projecting from their heads, have been found in the tombs of the ancient Greeks and Romans, and the countries of the Far East have had puppets for many centuries. In Java, for instance, there are many varieties, all elaborate and all with a very early origin. Shadow puppets, carved from the hides of animals, and connected with ANCESTOR WORSHIP (q.v. Vol. I), have been traced back as far as the 7th century in Java, and are probably older than that. The puppets are held high above the head on wooden sticks, so that their shadows are projected on to a screen. Later than these are the figures carved from soft wood, which are more realistic in appearance than the exaggeratedly thin and angular shadow puppets, and are watched by the audience not as shadows but in reality. At first they were carved only in double-sided relief, then later in the round. They were dressed in real clothes from the waist down, and manipulated by a rod through the centre of the body.

A PUNCH AND JUDY SHOW AT THE RODNEY YOUTH CENTRE, LIVERPOOL. This shows the glove puppet stage from the back. *Picture Post*

Shakes v. Shav A PUPPET PLAY BY GEORGE BERNARD SHAW
Performed by the puppets of Waldo S. Lanchester's Puppet Theatre. *Planet News Ltd.*

It became the custom in many places for actors to imitate the puppets, wearing masks of skin or light wood held by a strap gripped in the teeth. All the words were spoken by the manipulator, and the dialogue was accompanied by music. There were variations on this practice, in which the actors had their features painted like masks, and sometimes spoke the dialogue themselves. China and Japan, too, had their tradition of dancing dolls, which, in the 16th century, performed popular ballads and short plays. Some of these dolls were nearly life-size, each with two or even three manipulators, who stayed in view of the audience. In Japan the puppet stage was highly developed during the 17th century, and played its part in the invention of much stage machinery. It was for the puppet stage, for instance, that the revolving stage is said to have been first devised there, and scenery painted in perspective.

In medieval Europe puppets were popular in Italy, France, Germany, and England. They were probably introduced to other countries from Italy, where they were used by the Church for representing religious scenes such as the Nativity. Tales of chivalry and comedy were performed by travelling showmen, and puppet clowns copied from local types and possibly from the Commedia dell' Arte (*see* HARLEQUINADE AND PANTOMIME) were included. Some of these dolls were 'glove' puppets, worked by the hands concealed under the costume; others were jointed and worked by strings threaded through the limbs. The term 'marionette' came, by the 17th century, to be applied particularly to the full-length jointed figure suspended from strings. All kinds were well known all over Europe. In England there were puppet performances, showing miracle plays and Bible episodes as ambitious as the Creation and the Flood. They continued in unbroken popularity, becoming more elaborate, until in the 19th century in France and Italy they were even made to perform Opera and Ballet.

Both on the film and television screen puppets can be used to produce a variety of unusual effects; and their size makes them very suitable for the small compass of Television reproduction. In America there has recently been developed yet another function for the puppet, in advertising. Tableaux and short episodes, which can be easily shown in shops, have been

highly successful, and prove the adaptability of the puppet-show and its appeal to the modern mind.

After its long history in many countries the puppet now exists in a few main types. Some of these can only be successfully operated by professionals, but many of them can be both made and operated by amateurs (*see* PUPPET MAKING). In general, there are four main types of puppet. The 'glove' puppet, the 'marionette', the 'rod' puppet, and the 'shadow' puppet. To work the glove puppet, the right or left hand is placed inside the glove, with the first finger in the head, the thumb and the second finger in the two arms, and the rest of the fingers closed across the palm of the hand; by moving the fingers the puppets can be made to go through most life-like actions, and by operating two at a time, a conversation or a fight can be represented. For the glove puppet the level of the stage is at face level or slightly above the head, and the operator's body is concealed by the structure of a tall booth. With marionettes, the operator stands on a bridge, which, if the puppets are very large, may be above the stage, but is usually a step behind the stage with a bar on which the operator can lean. The strings from the various limbs of the marionettes are attached to a wooden control, which is held in the operator's hand above the stage. The figures are moved by rocking the control, pulling it in various directions, and by moving separate strings. The rod puppet is moved by rods from below, like the Javanese type described earlier, or sometimes it is moved by rods in grooves on the stage. The shadow puppet also is worked by rods, the figures being made of cardboard, stiffened and jointed with thread or paper-clips.

There are several ways of producing puppet plays. In one way the story can be read out while the puppets act it in MIME (q.v.), or in another a reader describes the general narrative of the story while other speakers take part in dialogue. Music and other sounds may be added. Speakers who are taking part in a scene should stand close to the operators who are controlling those puppets for whom they are speaking, and constant practice is necessary to synchronize the action with the words. There are a great number of subjects which can be adopted for puppet theatre, fairy and folk tales being perhaps among the most suitable subjects. The glove puppet is most familiar in the PUNCH AND JUDY

Show (q.v.). Marionette shows with life-size puppets have become popular in the present day, especially on the Continent, where full-length plays are performed by these figures. In Czechoslovakia, for instance, there are theatres devoted entirely to marionettes, with elaborate staging, costume, dialogue, and singing. England has no comparable puppet theatre, but visits from Continental companies have been very successful.

PUPPETS, MAKING OF. Of the various kinds of puppets the most common are glove puppets and marionettes—or puppets worked by strings or wires. A glove puppet has a head with a hole up through the neck; and attached to the neck is a cloth dress, which is shaped rather like a three-fingered 'glove'. This puppet is worked by the hand inserted into the dress or glove, two fingers making the arms of the puppet, and the third finger working the head. Some glove puppets have legs showing, but they are
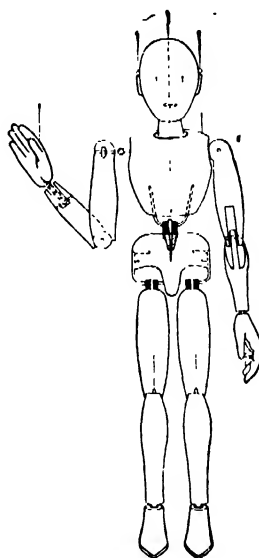

DIAGRAM SHOWING THE CONSTRUCTION OF A MARIONETTE
The dotted line from *X* represents the string attached to the marionette's back. From Waldo S. Lanchester, *Hand Puppets and String Puppets*
Dryad Press

not used for walking. Marionettes are complete figures with jointed limbs to which strings are attached, and which are manipulated by the pulling of these strings. The best ones are carved out of wood; others are made on a wire foundation, with the head, hands, and feet modelled out of papier mâché, and the limbs padded out with material. Puppets never work very well if they are too small; for a glove puppet, the head should be about the size of a tennis ball; for a marionette, 15 inches is a convenient height for the whole figure, though marionettes are often made much larger—even life-size.

The head is a most important part of all puppets, especially of glove puppets. It can be carved in wood, or modelled in some sort of

plastic material, such as clay, plaster, or papier mâché, the last being probably the most suitable because of its lightness. A glove puppet head is modelled on a neck made of a short length of cardboard tube, into the hole of which the first finger of the operator's hand should fit comfortably. A marionette head, on the contrary, has a solid neck, made from a short length of rounded wooden dowel-rod or broom handle, and long enough to be fitted into the body part. Before beginning to make the actual head, it is best to make a working model to help in getting the size right.

Papier mâché is made by grating wet fragments of newspaper, or rubbing them on a grooved board, until they have become a smooth pulp. The water is then squeezed out, and the pulp mixed with about 19% powdered whiting or china clay. Before starting to model the shape and features of the head, it is best to make a foundation of damp pulp mixed with about half the amount of cold-water paste. The tube of the neck is dipped in thin glue and the mixture shaped round it, till it looks like a giant match-head. This foundation is then punched all over with small holes and slowly dried. When it is dry, the shape of the head can be modelled by mixing pulp and cold-water paste as before and moulding it on the foundation. The mixture is pressed well into the holes, which act as a key, and small bits of pulp added to make the features, which are more effective if they are rather exaggerated. Modelling tools can be used to give finish. The head is then slowly dried, as before, and when it is hard, finer details of line can be inserted with a sharp knife or razor blade.

When modelling the neck for a glove puppet head, it is convenient at the same time to model a ridge round the neck to which the costume can be firmly fixed. For a marionette head, the neck has to be tapered a little so that it will fit into the body. Oil colours are the best for painting the head—ordinary flat white undercoating mixed with artists' oil colours for the different skin textures and shades. Dress for a glove puppet is very simple. It is usual to have a standard black undergarment for each, and other garments suitable to the character which the puppet represents can be fitted over this.

The diagram gives an idea of how a marionette is made. Ordinary deal can be used for the body; but for the limbs it is better to use a finer-grained wood, such as American white-wood or lime.

For carved heads as well as for hands and feet lime or birch is best. The dressing of a marionette needs care: too thick a material can undo all the work that has gone into jointing the figure, and only the best and thinnest materials obtainable should be used. Miniature versions of dress-patterns used for humans are suitable for marionette clothing. Carpet thread is the most satisfactory for the strings.

PUTTING THE WEIGHT, *see* ATHLETICS, FIELD EVENTS.

PUZZLES. These very old forms of entertainment can be classified into three types—verbal, numerical, and mechanical puzzles. The essentials of every puzzle are the same: its solution should demand the exercise of skill; there should be only one answer, and all the material for finding the solution should be available in the statement of the puzzle.

1. WORD-PUZZLES are among the oldest and most numerous, and are closely connected with MAGIC and SPELLS AND CHARMS (qq.v. Vol. I), words being thought to have a mystical power. Tricks with words have always been popular also as a source of amusement. The pun, a play upon two meanings of the same word, is the simplest form of word play. An anagram is a word in which the letters can be rearranged to form another word. Some words offer a variety of anagrams, such as angered (derange, enraged, grenade, and grandee), adroitly (dilatory and idolatry), and lustre (ulster, sutler, rustle, result, lurest, and rulest). When the anagram is used as a clue in another puzzle the jumbled word is often concealed in a sentence or in a longer word. The Greeks and Romans were fond of constructing palindromes (sentences which could be read both ways) and, although English is not so suitable for these, successful ones have been composed, such as Adam's reputed greeting to Eve in the Garden of Eden: 'Madam, I'm Adam,' and Napoleon's imaginary saying: 'Able was I ere I saw Elba'. Palindromic word squares which can be read in four ways have been composed. The most famous is the ancient Latin charm:

S A T O R
A R E P O
T E N E T
O P E R A
R O T A S

(Arepo, the sower, holds the wheels at work)

The following example is one of the best that could be achieved in such a language as English:

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L I V E D
I M A D E
V A S A V
E D A M I
D E V I L
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This can be read in all four directions as 'Lived I, mad Eva, saved amid evil'.

The word square is related to the palindrome, for it consists in a pattern of words which reads as the same sentence both across and downwards. In the following example:

I beg an audience for my newest tale
The *vade mecum* of a country squire,
Who, long a sessions judge, would often rail
  'Gainst appetite's tyrannical desire;
And so made ptarmigan (just then the fashion)
  An earnest symbol of judicial passion

the words which compose the word square are all concealed in the verse: Beg—an; E—vade; G—a—ses; Ade—pt; Nest—s. They can be set out as follows:

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B E G A N
E V A D E
G A S E S
A D E P T
N E S T S
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The acrostic closely resembles the word square. It was originally a piece of verse in which the initial letters of each line, read downwards, formed a word. The name, which is Greek, was first used of the utterances of one of the ancient Greek sibyls (or prophetesses) which were written on loose leaves, the initial letters making a word when the leaves were sorted and laid in order. Verses in acrostic form were popular in the 19th century. For example, the initial letters of Lewis Carroll's lines at the end of *Alice Through the Looking Glass*:

A boat, beneath a sunny sky
Lingering onward dreamily
In an evening of July. . . .

spell out the name of the original 'Alice': Alice Pleasance Liddell. Nowadays only the double acrostic is recognized. This has two uprights, or pillars, and lights (or words across) joining them. The acrostic is not itself a verse, although the clues are given in verse form. The following is an example:

UPRIGHTS

Who wrote *God Save the King*? 'Twould be
No less than fitting, if 'twere he!

LIGHTS

1. When hardship comes (as hardship does)
   One recollects the Man of Uz.
2. This substance is prepared, we think,
   By blending copper, tin, and zinc.
3. This opal, reconstructed, may
   Suggest how pain is kept at bay.
4. Of man's beginnings, much we know
   Here came to light, some years ago.

The completed acrostic should be as follows:

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J        O      B
O    rmol    U
H    orpita  L
NeanderthaL
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The crossword puzzle, now the most popular of all, has grown out of the acrostic, and was first widely publicized in America in the early 1920's. Crosswords range from the simple type of puzzle in which every clue is a straightforward synonym of the word sought ('coniferous tree' for Larch, 'girl's name' for Edna) to those which involve considerable general knowledge on the part of the solver, and 'cryptic' crosswords in which every clue is a minor puzzle itself. There are two recognized formats, in one the words are divided by blocks which form a geometrical pattern, in the other by bars.

Another form of word puzzle is the rebus (Latin 'with things'), in which words are represented by pictures. It is a form of CODE and is connected with early forms of HIEROGLYPHIC WRITING (qq.v. Vol. IV). In HERALDRY (q.v. Vol. IV) the word is applied to the devices on a coat of arms which illustrate the name of the family to whom it belongs, such as the broken spear on the shield of Nicholas Brakespear. Dr. Johnson defined a rebus as 'a word represented by a picture', but the name is also applied to a pictorially represented sentence, as in the following examples:

'Be independent but not too independent.'
(B—in—D—pendent butt knot 2—in —D— pendent.)

'A fond lover' (A F on D; L over).

2. MATHEMATICAL PUZZLES. Numbers have a particular fascination, and there is infinite variety in mathematical puzzles. Sometimes they do not involve actual numbers, but simply the exercise of reasoning power and the use of some simple mathematical principle.

In some of the most amusing the impossible is apparently proved, and the puzzle is to find the fallacy involved. One of the simplest is the trick to prove that one has eleven fingers, by counting backwards on the right hand 'ten, nine, eight, seven, six' and then holding up the five fingers of the left saying, 'and five makes eleven'.

Another favourite type is the 'inferential puzzle', in which the words of the puzzle are as confusing as possible, but the answer is generally arrived at by a simple process of elimination. A very old example of this, not involving numbers, is the problem:

> 'Brothers and sisters have I none
> But this man's father is my father's son.
> Who is he?'

The answer is, 'My son'.

The puzzle may take a more complicated form as in the following example:

For the Inter-Faculty Football Shield (Soccer) at Clownchester University, teams representing each Faculty play one match against each of the others. Two points are awarded for a win and one for a draw. If the two leading teams score the same number of points, the destination of the trophy turns upon goal average. As a result of this season's games, the Faculties of Arts and of Medicine are to hold the trophy jointly. Each won two matches and lost the third, and their goal averages are identical. No matches, in fact, were drawn; the Faculties of Law and of Science each won one. No two matches produced the same result, and the numbers of goals scored were: Law, 6; Arts, 6; Medicine, 4; Science, 1. What was the result of the match between the Faculty of Arts and the Faculty of Medicine? (Solution: The Faculty of Medicine beat the Faculty of Arts by 2 goals to 0.) This is a matter of inference within the numerical framework of the puzzle.

Other mathematical problems involve factorization, as in the following simple example:

Mrs. Goodheart, who has more money than she needs, gives, year by year, an increasingly large sum to her favourite charities. At the beginning of the year she multiplies together the ages, in years, of her three daughters; and she gives away that number of shillings which is equal to the product. Last year, in accordance with this formula, Mrs. Goodheart gave away no less than £1,798. How much will she give away this year? (Solution: £1,968.) Several answers are numerically possible; but only the one given makes sense.

Of the many other types of mathematical problem a number can be solved algebraically, as in the following:

'When I was in Poona', said Colonel McTopee, 'it took my wallahs five days to prepare a polo ground. And the job cost me 785 annas.'
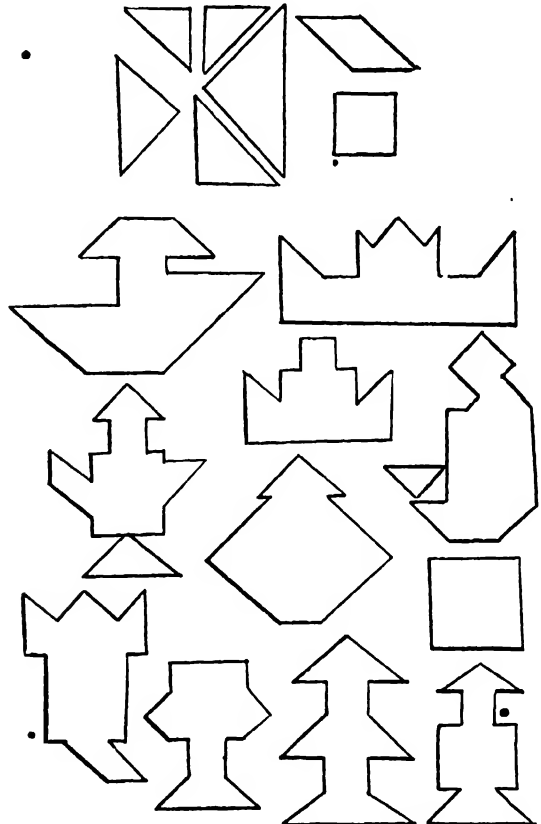

FIG. I. A TANGRAM
The shapes above can be arranged into the various patterns shown below them

Cat's Cradle

"Taking off"

Soldier's Bed

"Taking off"

Candles

"Taking off"

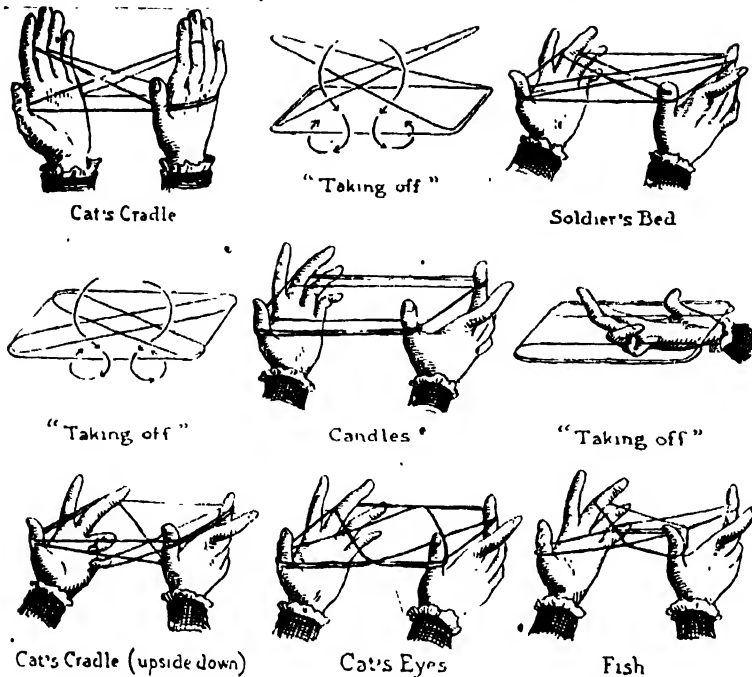Cat's Cradle (upside down)

Cat's Eyes

Fish

FIG. 2. SOME OF THE MOST FAMILIAR PATTERNS OF THE CAT'S CRADLE
From Lady Gomme, *The Traditional Games of England,
Scotland and Ireland,* 1894

'How many wallahs were working on it?' asked someone.

'Can't remember', said McTopee. 'All I can remember is that, each day after the first one, I employed three more wallahs than I'd employed the day before. Each of 'em received so many annas exactly. But the more of 'em I put on the job, the less well they worked. Each day after the first one, I paid each of 'em two annas less than I'd paid the previous day. A perfect example of the law of diminishing returns.' On which of the five days did McTopee's outlay reach its maximum, and how much was it? (Solution: McTopee's successive expenditures were: 119 annas; 150 annas; 169 annas; 176 annas; 171 annas. So his maximum outlay was incurred on the fourth day.) It is easily found that McTopee's outlay on the third day was 169 annas, i.e. 13 'wallahs' at 13 annas each; and the rest follows.

3. MANIPULATIVE PUZZLES. There are many puzzles involving an exercise both of reasoning power and manipulative skill. Among the oldest of these are the many Chinese puzzles, known for thousands of years. Some are made

of wood and ivory, and have a number of components which must be fitted together to form a prescribed solid figure. The tangram also originated in China. It is a geometrical puzzle, consisting of a square cut up into seven pieces. These can be rearranged so as to form several hundred figures, roughly resembling men, boats, houses, birds, beasts, furniture, and so on. The game may be played with black paper, cut up into any definite geometrical pattern (see Fig. 1). The modern jigsaw puzzle is a far simpler version of this type of puzzle. A picture, backed by plywood, is cut into a number of pieces of irregular shape, which must then be fitted together. The most elaborate jigsaws consist of up to 1,000 pieces. Also Chinese in origin is the wire puzzle in which a number of loops of wire are hooked together, the problem being to separate them.

Puzzles with string or thread are very old and of obscure origin. They are world-wide, and are to be found amongst primitive tribes. The Cat's Cradle is perhaps the best known of these. It consists of a series of patterns made by a loop of string on the two hands. Two people are required, the string being changed from one pair of hands to the other, according to a particular formula. Great skill is needed in the taking off (see Fig. 2). The origin of the name Cat's Cradle is unknown, and may be a corruption of 'cratch cradle' (cratch being an archaic word for a manger) referring to the shape of the first figure. There are different names for the remaining eight figures, all referring to the patterns they make:
1. Cat's cradle. 2. Soldier's bed. 3. Candles. 4. The cradle inversed, or manger. 5. Soldier's bed again, or diamonds. 6. Diamonds or cat's eyes. 7. Fish in dish. 8. Cradle as at first.
Alternative names are barn-doors, bowling-green, hour-glass, pound, net, diamonds, fish-pond, fiddle.

Q R

QUADRILLE, *see* BALLROOM-DANCING.

QUARTER-STAFF. Like cudgel-play and SINGLE-STICK (q.v.), the old sport of quarter-staff had its origins in Somerset and Berkshire. The weapon used was a stout cudgel, from 6 to 9 feet long, grasped with both hands. The right hand generally gripped the staff a quarter of the distance from the lower end—hence the sport's name. The left hand held the weapon in the middle and propelled it in attack and defence. The target was the head, and thrusts were parried with the weapon. The quarter-staff champions fought till, in the forceful language of the day, somebody's head was broken, that is, till blood was drawn. In ancient times the scouring of the White Horse, near Wantage, was the occasion for great quarter-staff competitions. The intervals between bouts were occupied with whistling tournaments, at which the prize went to the whistler who could most clearly render a tune in the face of an expert clown going through all his repertoire of grimaces to put him off.

Quarter-staff contests were most popular in the Middle Ages, when contests with the formidable oak staff tipped with iron were the poor man's or the yeoman's tournament. Indeed, even knights did not disdain this form of fighting: there are pictures showing dismounted champions, their lances in splinters, laying into each other with formidable oaken staves, sharpened to a point.

In the days of its popularity the quarter-staff was probably used as a practice-substitute for hand to hand encounters with two-handed battle swords or with the long sword. Certainly it taught courage, and developed strength and the combative instinct, though it was hardly a type of sport which led to elegance of style. It retained its popularity among the robust English countrymen until late in the 17th century; and is still occasionally played to-day in the army as training for bayonet play. But in general FENCING and BOXING (qq.v.) have now replaced this violent sport in the affections of the sporting public.

See also TOURNAMENTS.

QUINTAIN. Tilting at the quintain with a lance was an old form of exercise for practising the arts of war. Originally, a staff or spear was set up in the ground with a shield hung on to it. The object was to smite the shield so that it fell to the ground. Later, a human figure carved in wood became the target. The figure often represented a fully-armed Turk or Saracen, the typical enemy of medieval days, with a shield in the left hand and a sabre in the right. The target was on a pivot, and the horseman had to ride at it and direct
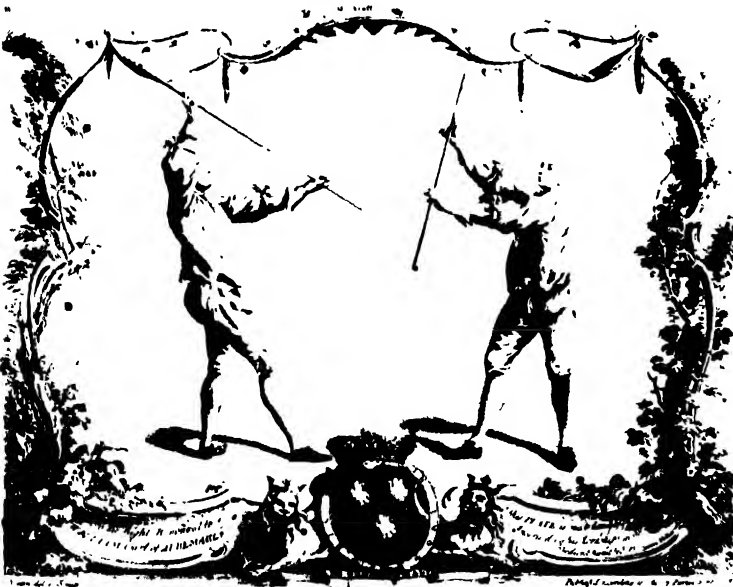
A BOUT OF QUARTER-STAFF
From an engraving of 1738

TILTING AT THE WATER QUINTAIN

An illustration from J. Aspin, *Ancient Customs, Sports and Pastimes*, 1835

his lance between the eyes and on the nose. If he struck the shield, the wooden figure whirled round and hit him with the sabre. This was considered a disgrace. In contests between several tilters the winner was judged on a system of points, 3 for a hit on the top of the nose between the eyes, 2 on the nose below the eyes, 1 to the point of the chin. Anyone hitting the shield and turning the quintain round was disqualified.

Another type of quintain was post quintain or pel (pole). In this a pole about 6 feet high was stuck in the ground and was attacked with sword and shield. Pel was also used as a mark to cast at with a spear, or shoot at with a bow and arrow.

By the rules of chivalry no one under the rank of esquire could take part in real tournaments in the lists; consequently the yeomen and burgesses of England had recourse to the quintain, which was open to anyone. Often a cruder quintain was used, consisting of a stake with a flat piece of board attached; and sometimes a bag of sand or of flour was the target. Those without horses ran at it on foot.

Water quintain, a common entertainment in the 14th century, was played by the public of London during the Easter holidays. A pole with a shield attached was fixed upright in the Thames, and the players tilted at it with a lance from a boat. If a player failed to hit it, he lost his balance and fell into the river.

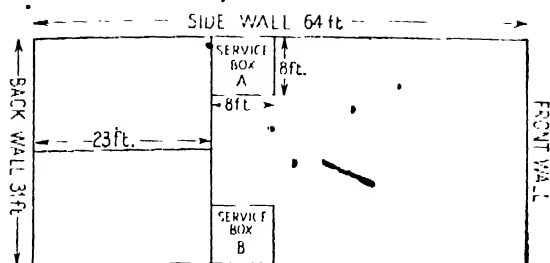See also TOURNAMENTS; COMIC SPORTS; TRADITIONAL SPORTS AND CUSTOMS.

QUOITS, *see* DECK GAMES; 'PUB' GAMES.

RABBITS, *see* RABBIT-KEEPING, Vol. VI.

RACING, *see* AIRCRAFT RACING; ATHLETICS, TRACK EVENTS; BOAT-RACES; CHARIOT RACING; CYCLE RACING; GREYHOUND RACING; HORSE RACING; MOTOR RACING; MOTOR CYCLE RACING; PIGEON RACING; SWIMMING RACES.

RACKETS. This game, which should not be confused with SQUASH RACKETS (q.v.), is perhaps the most natural and one of the fastest ball games in the world. It is played in an indoor court which has masonry walls faced with black cement, and a cement floor coloured black or red. The court is marked out as shown in the diagram. The racket is like that used in squash, but is about $2\frac{1}{2}$ inches longer, and has to be very much stronger to stand up to the hardness of the ball and the speed at which it travels. Except in size, 1 inch in diameter, a racket ball bears no relation to a squash ball, being made of strips of cloth tightly wound over each other, bound with twine and covered with smooth white leather, stitched into four quarters.

The game is started by one player hitting the ball from the service box directly on to the front wall above the service line in such a way that it bounces in the opposite service court. It need not land in it direct, but may hit first the side or back wall or both. The receiver may take it on the volley, that is, before it bounces, or after it has bounced once (the floor alone counting as a bounce), and he must hit it back on to the front wall above the board. It need not necessarily hit the front wall directly, but may be played via the side wall. The rally ends when one player fails to return the ball, or claims a 'let' because his opponent is in the way. The server, or 'hand-in', continues serving and scoring points until he loses a rally, when service passes to the other side or to his partner. Each time a side is put 'out', the new hand-in may start serving from whichever side he likes. In this country two services are allowed; in the U.S.A. only one. A 'foot-fault' is called if the server does not have one foot entirely in the 'box'. A fault that goes below the service line is called a 'cut'; one that fails to cross the mid-court line is called 'short'; and a service on to or below the board, or up into the gallery, is a double fault. As in squash and other covered-court games, the receiver may 'take' a fault if he wishes, and the game proceeds as if it were a good service.

```
←— - — - —  SIDE WALL 64 ft - —  —→
                SERVICE
                 BOX
                  A      8ft.
                 8ft
  ←- -23ft.— →

                SERVICE
                 BOX
                  B
```

(court diagram: BACK WALL 3 ft, FRONT WALL)

In rackets, points can only be scored by the player who is 'in hand'. In doubles, both opponents have to be 'put out' before the other side is 'in'. At the beginning of each game, however, the side that serves first has only one hand.

A match is usually best of five games in a single, and best of seven games in a double. The score rises in ones until one side reaches 'game' at 15. If the score reaches 13–all, the side first reaching 13 has the option of deciding whether they shall play 'set 5', the side reaching 5 first being the winner; or 'set 3'; or 'no set', when the game proceeds as normal up to 15. At 14–all the choice is 'set 3', or, again, 'no set'— though few players would choose 'no set', since the opponent would be 'in hand'.

Rackets is an expensive game because the courts themselves cost a great deal, and because the rackets and balls are frequently damaged during play. As the balls are hand-made (and the same racket ball is made up over and over again), they vary a great deal in hardness or even shape, and consequently often have to be discarded after one rally. No type of ball has yet been found which gives the same satisfaction as the leather-covered ball; although, owing to the shortage of leather after the Second World War, a ball has been evolved with the same core as before, but covered with linen. The linen-covered ball has a longer life than the leather-covered and is particularly suitable for beginners. As in LAWN TENNIS (q.v.), steel-framed instead of ash-framed rackets have been tried but without success.

The official date of the beginning of rackets in this country seems to be 1820, when a roofless court was built at Harrow, and one Robert MacKay of London claimed the world's championship—without, apparently, having to play for it! In Queen Victoria's reign the game reached its hey-day. Roofed courts began to be built in the 1850's and 60's. In 1853 a number of courts were built at Prince's Club in London;

the Queen's Club Courts were opened in 1888. Rackets is particularly associated with the older public schools, and through them the game spread to India. Apart from Britain and India, rackets is played only on the North American continent, where it is not a school game, but is confined to a few players in very few places such as Montreal, Philadelphia, Chicago, and New York, each of which has a Rackets Club. The governing body in Great Britain is the 'Tennis and Rackets Association', and in U.S.A. the 'Rackets and Tennis Club of New York'. The holders of the World's Rackets Championship have nearly always been professionals: the championship has only twice been held by an amateur—first by W. H. Dyke, who won it in 1862, and secondly by D. S. Milford, who beat the American 'open' champion in 1937. Apart from these 'challenge' championships (world, open, and professional), there are several annual competitions in this country, the most important being the Amateur, Army, and Public Schools Championships, all played in the spring at Queen's Club, Kensington.

RADIO, *see* BROADCASTING; TELEVISION.

RAFFLES, *see* LOTTERY.

RAILWAY SPOTTERS' CLUBS. Railways have always had a fascination for boys and girls. It was to further this widespread interest that Ian Allan, a young employee of the Southern Railway, brought into being the first club for young railway enthusiasts who wished to collect the numbers of locomotives and to increase their knowledge of railway affairs. The ABC Locomotive Series Spotters' Club was formed in December 1944. In the first 3 years of its existence, its membership rose to 15,250, and in 1947 was increasing at the rate of 150 a week. Members of the club wear a badge, and are organized in local groups which they form and run themselves. They are bound by a code of honour while pursuing their hobby, not to trespass on railway property or hinder railway servants. Other smaller clubs exist in Great Britain for the hobby of spotting, and there is a kindred organization in U.S.A. In Australia, New Zealand,

Holland, and Belgium, too, the hobby has become popular, and boys and girls in these countries exchange letters with British fellow-enthusiasts. The main activity of spotters' clubs is the collecting of locomotive numbers: but local groups also organize excursions, brains trusts, and talks by railwaymen.

See also Vol. IV: RAILWAYS.

RAILWAYS, MODEL, see MODEL RAILWAYS.

RANGERS, see GIRL GUIDES.

RECORDERS are wood-wind instruments which reached the height of their popularity in England and on the Continent in the 16th and 17th centuries. They are vertically-held flutes; but, whereas the wind passage of the modern transverse flute and piccolo is formed by the lips of the player, that of the recorder is formed by the mouthpiece and restricted by a plug, or 'fipple'. English-made recorders were held in high favour for centuries on the Continent, where they were known as English flutes, suggesting that they were English in origin. A picture exists of a recorder player dating back to 1175.

The recorder was in vogue at a time when the orchestra as we know it did not exist. It never became an established orchestral instrument, though it found its way occasionally into the scores of Bach and Handel. There grew up a family of recorders, whose range made possible the playing of these instruments in concert, or consort, that is to say, in groups. A consort of recorders became as fashionable as a 'chest' of VIOLS (q.v.). Among the instruments collected by King Henry VIII, a versatile performer, were no fewer than seventy-six recorders. Shakespeare makes frequent reference to the instrument in his plays, especially in *Hamlet*, where he discusses its music, construction, and technique. Later, Samuel Pepys, in his diary dated 1668, after he had purchased a recorder, remarked '. . . the sound of it being of all sounds in the world most pleasing to me'. The emergence of the ORCHESTRA (q.v.) under the influence of Bach and Handel marks a decline in the popularity of recorders, because the modern transverse flute with its fuller tone could combine more effectively with other instruments. In the 19th century

recorders were almost unknown, and their rediscovery in the present century was due to the new interest in the music of the 16th and 17th centuries, caused largely by the researches of Arnold Dolmetsch.

The bore of a recorder is mainly conical, and the eight holes include one for the thumb of one hand and one for the little finger of the other. The modern German recorder, the *Blockflöte*, differs from the modern English instrument in the position and size of the holes. The four main types are the descant, treble, tenor, and bass. The ranges of the first three each extend to more than two octaves, that of the bass being slightly less. The lowest note of the descant recorder is the C above the piano's middle C, while that of the treble is the F above middle C. The lower limit of the tenor is middle C itself, the bass extending to the F below.

Other fipple flutes are the flageolet with six holes (two on the underside for the thumbs), the tin whistle with its six holes at the front, the seven-holed bamboo-pipe (*see* PIPE-MAKING), and the pipe and tabor, a combination of a small, three-holed pipe and a drum which can be played by one person.

See also MUSICAL INSTRUMENTS; WOOD-WIND INSTRUMENTS.

REED ORGANS. 1. This group of instruments includes the harmonium, the mouth-organ, the accordion, and the concertina; which, though differing widely from each other in appearance, all work on the same general principle. A 'reed' is used to produce sound in a variety of other instruments, and may be made either from part of an actual wooden reed, as in the bagpipe and the oboe, or of metal, as in the organ and in the reed organs here described. Further, reeds may be 'beating' reeds—in which case they are enclosed in a tube and vibrate against an air slot; or 'free' reeds—in which case they are placed in a slit and vibrate when air is blown through it. All modern reed organs operate on the 'free' reed principle. The common factor in all reed organs is that the reeds are arranged in series according to quality of tone, each reed producing a separate note.

The Chinese instrument, known as the 'cheng', is said to be the earliest known reed organ, and this is supposed to have been introduced into Western Europe by the Abbé Vogler (1749–1814), who is also credited with having improved
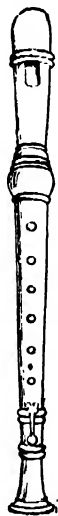
on the original (*see* MUSICAL INSTRUMENTS, HISTORY OF). The 'regal', a small manual organ with beating reeds, suitable for carrying in processions, can be traced back to the 15th century, and was still popular in the early 17th.

2. MOUTH-ORGAN. In 1829 Sir Charles Wheatstone invented a mouth-organ, to which he gave the name 'aeolina'. Nowadays it is usually called a harmonica. The instrument is technically interesting because it shows in a simple way the principle of the free reed as it operates in the larger units of the accordion and harmonium. The reeds, which are metal and graduated, are fixed within slots in a metal plate inside a box, and have wind passages arranged in two parallel rows. The player's lips move to and fro across these passages, the tongue covering those holes not needed. Scale progress is made by blowing and suction. The rudiments of mouth-organ playing are easily mastered. The instrument has been adopted widely in the teaching of music in the schools of the U.S.A. and Germany.

3. ACCORDION AND CONCERTINA. The accordion is said to have been invented by Buschmann of Berlin in 1822. It is held by both hands in front of the body; and the sound is produced on the same principle as the mouth-organ, the blowing and suction being brought about by the expansion and contraction of pleated bellows which are pushed in and out by the left hand. The player produces notes by pressing buttons, which work much like the keys of a piano. Indeed, the piano-accordion, invented by Bouton of Paris, has a keyboard like that of a small piano. In all accordions the right hand plays the melody and the left hand the chords. When a key is depressed by a right-hand finger, two different reeds are played, one sounding during the expansion of the bellows, and the other during contraction. These two reeds maintain the same note, but the quality and power are different. In the mouth-organ the two reeds produce different notes. Octave coupling devices have increased the range of modern piano-accordions.

The Concertina, a modified and smaller accordion, was patented in 1829 by Sir Charles Wheatstone. It is held in both hands, like the accordion. The reeds are played by studs, mounted on hexagonal ends; and the wind passage is supplied by pleated bellows. Unlike the key of the accordion, each stud produces

one note of unvarying quality and strength. The social prestige of the concertina was at one time high, and some of the foremost composers of the 19th and 20th centuries have written for it. Tchaikowsky, for instance, included four concertinas in the score of his Second Orchestral Suite, No. 53. It is affirmed by players that the 'swinging' of the instrument improves the tone.

4. HARMONIUM. This instrument, which looks almost like a small piano, was introduced in the early part of the 19th century by a Dane called Kranzenstein, and a Frenchman, called Grenié. A significant improvement in tone-colour was effected in 1840 by another Frenchman, Debain, when he introduced the device of wind passages of varying sizes, operating different sets of reeds. He was the first to call the instrument a harmonium. In the modern harmonium, variety of tone-colour is provided by the use of stops. The wind is supplied by bellows worked by the feet, and the reeds are made to 'speak' by the depressing of the keys on the keyboard. Another Frenchman, Alexandre, added a stop-handle, known as the 'expression stop', which, when drawn, enabled the feet to govern the volume of the tone more sensitively.

The Mustel organ, a derivative of the harmonium, was invented by Victor Mustel of Paris. The top and bottom halves of its range of reeds can be controlled separately to provide sensitivity in expression. The American organ, which appeared in America as the cabinet organ in the middle of the 19th century, is very similar to the harmonium, but has no expression stop. Also the wind is sucked, instead of being driven, through the reeds.

See also MUSICAL INSTRUMENTS.

REGATTAS (Rowing), *see* BOAT-RACES, Section 3; (Sailing), *see* SAILING REGATTAS.

RELAY RACES. In these events a team of runners covers a distance by stages, each runner finishing one stage before signalling to a teammate to start the next. Formerly the runners touched hands, but now the signal is made by handing over a baton. In a relay, members of a team may cover equal distances, such as 4 × 440 yards, or unequal distances, such as a mile medley of 220, 220, 440, 880 yards. This type of racing originated in America, where it became a public sport about 1890; but it gained popularity elsewhere rather slowly: only one relay

TAKING OVER THE BATON IN A RELAY RACE
Members of the Cambridge Harriers in training at Charlton Park.   *Sport and General*

was included in the British A.A.A. championships from 1911 to 1926. It is a most exciting form of flat racing. One man's deficiency may be made up by another's excellence, so that a team's fortunes can fluctuate considerably throughout the race.

The chief technical difficulty in relay racing is the exchange of the baton between runners. It is compulsory for this to be carried out within a 25-yards stretch, and ideally when both men are moving at top speed. To ensure a good change-over, the new runner times his own start so that he has got into his stride by the time the previous runner has drawn abreast. Without looking round, he then stretches back his right hand to take the proffered baton firmly, and transfers it to his left in readiness to give it to the man next ahead.

Relays are now favourite races with the public, and most sports meetings include at least one such event. An unusual medley relay was the race run over 15½ miles of Paris streets by international teams of fifty a side in the years before 1930. Oxford and Cambridge hold an annual meeting devoted entirely to relays, the programme including a 'shuttle' (or to-and-fro) relay of 4×120 yards hurdles. Since baton-changing is impracticable in a 'shuttle', a special gate has been invented to ensure fair starts by hurdlers in this race. The finest relay racing yet

seen in Britain occurred in the match between the British Empire and the U.S.A., held at the White City in August 1936. The British Empire team won the 4×440 yards race in 3 min. 10·6 secs., only 1·2 seconds outside the present world's record. In the 4×880 yards, the United States team set up a world's record of 7 min. 35·8 secs., and the American 4×1 mile team made a British record of 17 min. 17·2 secs. But perhaps the greatest performance was that of the American sprinters in the 4×100 yards, where, by great speed and immaculate baton-changing, they returned a time of 37·4 secs., an average of 9·35 secs. for each 100 yards.

See also ATHLETICS.

REPERTORY THEATRE. In a sense the theatres of Shakespeare's day may be said to have been repertory theatres, in that the same company performed a 'repertoire' of several plays, which is what we understand by the term nowadays. It is usually applied now, however, to the many small theatres in the provinces, which have one or two producers and a company recruited for a season rather than for the duration of one play. Some of these theatres have names which have become important in the history of the theatre. The oldest existing repertory theatre is the Liverpool Playhouse, founded in 1911; among its distinguished pro-

ducers have been Basil Dean and William Armstrong, and it has had many great names among its acting personnel. Others are the Birmingham Repertory Theatre, associated with the name of Sir Barry Jackson; the Cambridge Festival Theatre, which was the scene of interesting enterprises under Terence Gray, and the Oxford Playhouse. After these were established the repertory movement grew, until there are now about 100 permanent repertory theatres in England and Scotland.

Repertory theatres have done a great service to the theatre in creating audiences in the provinces for all kinds of plays, from Shakespeare to the latest farces and drawing-room comedies; and they provide a very useful training ground for producers, actors, and stage managers. Unfortunately, too many of these theatres have to present a different play every week, because their audiences are not large enough to warrant a longer run. This can eventually lead to mediocre production and stereotyped acting, for the actors are overworked and have insufficient time to develop their parts. Repertories, which have no subsidy from the Arts Council of Great Britain, or from the town where they are situated, or from private individuals, have to depend on the popularity of their plays, and generally have to concentrate on the presentation of the latest West End successes rather than on more enterprising productions of Shakespeare and classical plays. Some are now experimenting with a fortnightly run, or are interchanging with another company so that a play is presented for a week in each of two places. The Arts Council has tried the experiment of managing a few theatres directly, such as the Theatre Royal, Bristol, where the Bristol Old Vic Company presents plays in repertory for a longer period than a week, and the Arts Theatre, Salisbury. It is to be hoped that by these means the repertory theatre will again become a living part of the theatre, rather than a refuge for actors and producers who can find no place elsewhere.

In London two companies have in recent years had very successful repertory seasons. John Gielgud and his distinguished company at the Haymarket Theatre presented plays by Shakespeare, Webster, Oscar Wilde, and Somerset Maugham. The Old Vic company, driven by the war from the historic premises in the Waterloo Road, pursued the policy built up there by Lilian Baylis, and presented Shakespeare and other English and Continental masterpieces at the New Theatre, St. Martin's Lane. This company, headed by Sir Laurence Olivier and Sir Ralph Richardson, has established repertory as a West End success. During the summer months, beginning on Shakespeare's birthday, 23rd April, a season of Repertory is held every year at the Stratford Memorial Theatre, at which a company of well-known actors presents a group of Shakespeare's plays, performing a different play every night of the week.

See also ACTING, HISTORY OF; THEATRE, HISTORY OF; PLAY PRODUCTION.

REVUE, see MUSICAL COMEDY.

RIDDLES. These are probably the oldest of word PUZZLES (q.v.), and they find a place in the ancient traditions of all races. There are examples in both the Bible and the Koran, and they are common amongst many native tribes, such as the Zulus, Swahili, and South Sea Islanders. They are closely connected with SPELLS AND CHARMS (q.v. Vol. I), arising partly from a primitive delight in mystery, and from the belief that words have a special magical power. In many old stories answering a riddle is the means of breaking a magic spell. The most famous of all is in ancient Greek legend—the riddle of the Sphinx:

> What goes on four feet, on two feet, and three,
> But the more feet it goes on, the weaker it be?

The answer is: Man, who crawls as a baby, and as an old man uses a stick as a third foot. By solving this, Oedipus saved Thebes from the ravages of the Sphinx; for, the riddle once solved, the monster was deprived of its magic power, and killed itself.

One type of riddle, often found in legend and fairy tale, refers to a particular circumstance known only to the questioner, and the solver usually has to rely upon secret information for the answer. One of the most famous examples is in the Bible—the riddle which Samson asked the Philistines to expound: 'Out of the eater came forth meat, and out of the strong came forth sweetness.' It referred to the swarm of bees and honey which he had found in the carcase of a lion, and it could not be solved by anyone who did not know of this incident. In Greek legend the replies of the oracles were often in the form of this kind of riddle, referring sometimes to an incident which would take place in the future.

In one story, for instance, the Delphic oracle prophesied that a man with three eyes should guide the Greek army; this actually proved to be a one-eyed man on horseback.

In some fairy tales there are characters, such as Rumpelstiltskin, whose magic power depends

Q. A wide Mouth, no Ears or Eyes,
No fcorching Flames I feel ;
I fwallow more than may fuffice
Full forty at a Meal.

A. *It is an Oven.*

Q. Tho' of a great Age,
I am kept in a Cage,
Having a long tail and one Ear ;
My Mouth it is round,
And when Joys do abound,
O then I fing wonderful clear.

A. *It is a Bell in a Steeple; the Rope be· tokens a Tail, and the wheel an Ear.*

SOME OLD RIDDLES
From *The New Riddle Book*, an 18th-century collection

upon keeping their name secret, the spell being broken only when someone finds out what it is. In others the riddle is not a puzzle but a straightforward question, which could have several possible answers, only one of which is correct. One of the best-known examples comes in the legend of the Loathly Lady (which the Wife of Bath tells in Chaucer's *Canterbury Tales*). The riddle is: 'What is it a woman most desires?' and the answer is 'Sovereignty'.

The most universal type of riddle is a kind of metaphor, describing an object in terms of something else. This type is very old and is known all over the world. It is, in fact, one of the earliest forms of poetry that we know. The tendency to invest inanimate objects with personality is common to all primitive people, and many of the oldest of these riddles, deal with familiar everyday things. The parts of the body are a favourite subject. The old English riddle on "The Teeth"—

A flock of white sheep
On a red hill
Here they go, there they go
Now they stand still

—is closely paralleled in a Zulu riddle, which likens the teeth to men dressed in white, performing a wedding dance. Many others describe the sun, moon, and stars—for example, the old Spanish riddle on the stars, 'What is the dish of nuts that is gathered by day and scattered by night?'; and an Anglo-Saxon riddle (among the earliest poems in our language) which describes nightfall and daybreak as a struggle for supremacy between the sun and the moon. Many old riddles are about familiar household objects, describing them with quaint humour, as in the old English rhyme, 'The Candle':

Little Nan Etticoat
In a white petticoat
And a red nose:
The longer she stands
The shorter she grows.

For many hundreds of years riddle-making was a popular pastime in all European countries. In the Middle Ages many riddles were serious and dealt with religious subjects. In the 18th and 19th centuries, however, riddle-making became a game—a kind of literary exercise, the riddles taking many forms and usually being in verse. They often involved the spelling of the word, as in the Riddle-me-ree, which gives each letter in turn, or the CHARADE (q.v.). A type of word play called an Enigma (Greek for 'riddle') was also popular. The following example is a play on the letter H:

It was wHispered in Heaven
It was muttered in Hell
An EcHo caught faintly
The sound as it fell.
On the confines of EartH
'Twas permitted to rest,
And the DeptHs of the Ocean
Its presence confessed.
It is found in the SpHere
When driven asunder.

It is seen in the ligHtning
And heard in the THunder,
Without it the soldier and seaman may roam
But woe to the wretch that expels it from Home.
In sHort, let it rest like a beautiful flower,
Oh! breathe on it softly,
It dies in an Hour.

The riddle involving word-play is the only one which has survived to-day. It is a question asked simply for the sake of introducing a facetious joke (usually a pun) into the answer, for example:

- Why need one never starve in the desert?
  Because of the *sand which is* there.

Neither this kind of joke, nor riddles in general, are as popular as they were; although they still linger on inside Christmas crackers and on the backs of matchboxes.

See also PUZZLES.

RIDING. The good horseman is recognized by quietness, determination, and balance. He is a part of his horse, and, no matter what happens, 'goes with' it. His horse is 'collected', that is, it is not ambling along nearly asleep, and he himself remains in the saddle by a combination of balance and grip. Between horse and rider there is obvious sympathy and confidence— yet the rider is clearly the master.

No one can ride well unless he has learnt to sit correctly at the halt. The seat bones should rest in—not on— the lowest part of the saddle. The back should be slightly hollowed, and the body upright. The head should be high with the eyes looking straight ahead, not down. The rider should be able to see only the tips of his boots protruding beyond his knees, and the balls of his feet should rest on the bottoms of the stirrup irons--though many good riders place their insteps right home in the stirrups. The heel should be lower than the toe. The good rider's hands curve inwards with the thumbs uppermost so that the wrists can give to the movements of the horse's head, and his hands should be able nearly to touch his coat buttons.

The horse has four principal paces---the walk, the trot, the canter, and the gallop. To carry out any one of them the good, as opposed to the bad and lazy horseman, directs the horse by what are called the 'aids', which the horse has been trained to understand and obey. By this system the rider gives instructions to his horse by the use of his hands, which, through the reins, control the forehand, and by the use of his legs, which control the hindquarters.

When the rider wants his horse to start walking he feels the reins and then squeezes the horse's sides, behind the girth, with his legs. To trot, the same aids are applied more strongly. When the rider rises in the saddle for trotting, his weight comes into the saddle as the horse's foreleg strikes the ground. Now at the trot, the horse leads with either his near (left) or off (right) foreleg, but if he leads for any length of time on the same leg, fatigue is bound to result, because the rider's weight is always coming down on the same leg. The good horseman, therefore, bumps in the saddle twice running about every 10 minutes, with the result that his weight changes from one foreleg to the other.

The horse may canter, also, with the near or off fore leading, and the experienced rider knows which without looking to see. To direct his horse to canter with the off fore leading, the rider sits down in the saddle, feels his left rein, leans a little back and to the left, and applies his left leg behind the girth, while keeping his right leg on the horse's side to prevent its hindquarters flying out. To direct a canter with the near fore leading, the aids are reversed. At the canter the rider's seat should never leave the saddle, and, at the gallop, should never touch it. At all four paces the rider's body should be in advance of the perpendicular.

The position most generally adopted for jumping nowadays is called the forward seat, which was introduced into this country by the great American jockey, Tod Sloan, in 1897. As soon as the horse takes off the rider leans forward. When the horse is on the top of the jump he extends his head: the rider's hands, therefore, should also go forward. On landing, the rider resumes his normal position, both as to body and hands. Many horsemen, including steeplechase jockeys and some hunting men and women, still lean back on taking off. But the tendency is all the other way.

The most efficient rider will be unable to exhibit to the full either his own ability or the capabilities of his horse unless the animal which he is riding has been properly looked after. This system of the care of horses is known as horse-mastership, and its responsibilities are roughly divided among three people: first, the groom, or owner-groom, who attends to such matters as
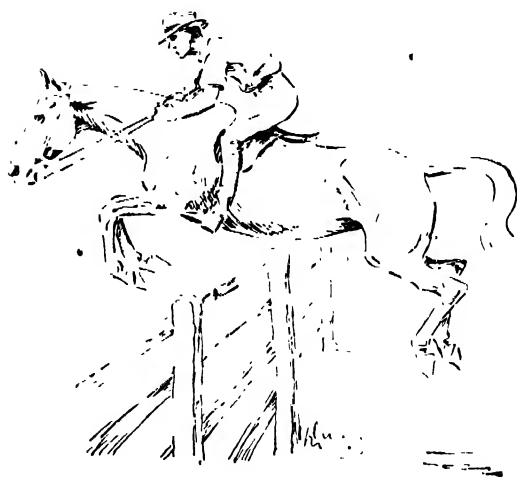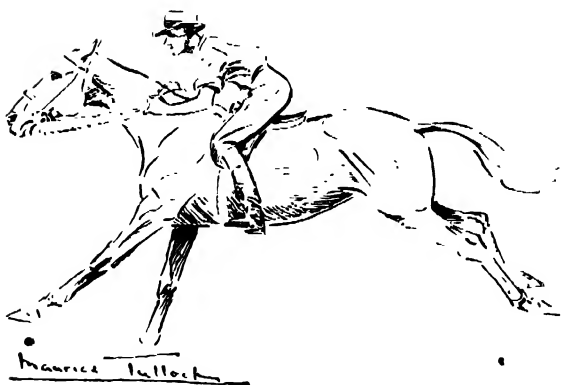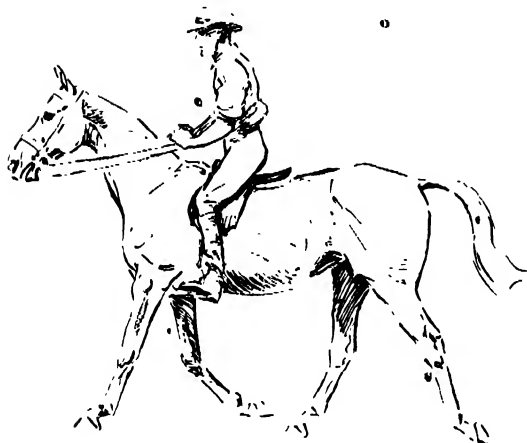
THE POSITIONS FOR RIDING

1. Halt. 2. Walking. 3. Trotting (the rider's seat is out of the saddle when the off fore and near hind legs are off the ground). 4. Cantering. 5. Galloping. 6. Jumping.

feeding, watering, grooming, exercising, and the care of minor ailments; secondly, the FARRIER (q.v. Vol. VII), who shoes the horse, and is responsible for fitting, not only normal shoes to normal feet, but also shoes which will cure or alleviate diseases of the horse's foot or correct faults in his action; thirdly, the VETERINARY SURGEON, (q.v. Vol. VI), who should be consulted when the owner is in any doubt as to the cause or treatment of apparent illness, as well as in the case of serious ailments.

Horses and ponies may be kept either in a stable or at grass, and the system of horsemastership varies to meet the different conditions. If he is kept in a stable he may occupy either a loose box, in which he is free to move about, or a stall, in which he is tied up. The loose box is preferable, but in either case there must be plenty of ventilation, light, and a very efficient drainage system. The most usual bedding on which the horse stands and sleeps, either in loose box or stall, is wheat straw; but other materials, such as peat moss, sand, ferns and bracken, or sawdust are sometimes used.

The constitutional well-being of the horse depends largely on the right management of watering, feeding, and grooming. A horse should drink, on an average, 10 gallons of water a day, and he may take this amount either from a water trough or from a bucket in his loose box. But he should never drink after feeding—always before. The staple food of the stabled horse is oats, which is mixed with chaff, that is, hay cut up into small pieces. With this may be mixed bran. After hard exercise, such as a good day's hunting, bran mash or linseed gruel will comfort the horse and improve his coat. Hay, in a haynet so that it does not get soiled, should be available at all times.

Proper grooming is important because it not only keeps the coat clean, but also enables waste product to pass through the skin. Stabled horses, which have the protection of rugs, are usually clipped once a year, generally at the end of October, when the winter coat has fully grown.

When a horse or pony is kept in the open and at grass all the year round, it is most important that there should be a constant supply of clean water, and that the paddock should be clear of broken glass, rusty tins, or loose barbed wire, as well as poisonous trees and plants such as yew trees and deadly nightshade. In a cold climate or exposed position it is better to have an open

shed into which the horse can go for shelter. In the spring and summer, especially in May and June, there will be sufficient feeding virtue in the grass and herbs; but in the autumn and winter this must be supplemented with hay and possibly oats. A horse or pony, living out, although he should be kept clean, should not be thoroughly groomed, as this destroys the ability of the coat to keep out wind and wet. Rugs are unnecessary, and, if the animal is to be exercised all the time on grass, shoes may be dispensed with, although a monthly visit to the farrier is still essential.

Much of the success in keeping a horse fit, whether in stable or at grass, depends on the experience and ability of the horsemaster in relating food to exercise, a successful policy in which will prevent many constitutional illnesses. A knowledge of the correct fitting of bits and saddlery will prevent such common defects as sore mouths and backs, girth galls, and chafes.

See also HORSES; PONY CLUB.

RIFLE SHOOTING. This term covers two kinds of sport, target rifle shooting where the
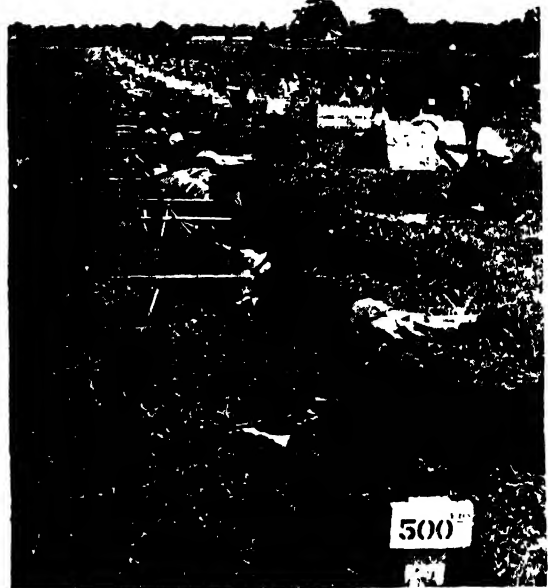
FIRING ON THE CENTURY RANGE AT BISLEY
There are 100 targets, one for each pair of competitors, at the 500-yards range. The register-keepers record the score of each competitor on a blackboard for all to see
Gale and Polden Ltd.

object is to make a score by hitting an artificial target, and sporting rifle shooting—the killing of game animals (*see* BIG-GAME HUNTING). There are two main kinds of rifles for shooting at targets —small-bore rifles having a bore of 0·22 inches, and full-bore rifles having a bore of 0·3 inches or more (*see* SPORTING GUNS AND RIFLES).

Small-bore shooting is carried out either on indoor ranges of 15–25 yards in length, or on open ranges where the distance from firer to target may be as much as 200 yards. The bullets from these rifles will travel a mile; so at the end of the range, just behind the target, is built the 'stop-butt', a high bank of earth or a brick wall faced with wood to stop the bullets bouncing back. The targets, made of cardboard, have a black circular aiming mark. Usually ten shots are fired at the target. At short ranges so many of the shots would pass through practically the same hole that five (or even ten) different aiming marks are arranged on the target, and two (or one) shot aimed at each. Each mark has a set

of rings belonging to it. A shot which cuts the smallest ring counts 10 points, one cutting the next bigger ring 9 points, and so on. The highest possible score for ten shots, known as a 'possible', is 100. Firing is done in the prone position (lying face downwards), and the rifle is steadied by means of a sling, and is aimed by getting the foresight and backsight in line with the aiming mark (see picture). The firer uses a telescope after he has fired to see where the shot has gone.

Small-bore shooting is widely practised in many countries by men and women, boys and girls. There are rifle clubs throughout Great Britain, and these are affiliated to County Rifle Associations and to the National Small-bore Rifle Association, which arrange competitions for teams and individuals. These competitions may be 'postal', when the teams fire on their own ranges and report their scores to each other, or 'shoulder-to-shoulder', when the teams fire on the same range and at the same time. There are also meetings held on big ranges which will hold

RIFLE SHOOTING FROM THE PRONE POSITION
The firer is using a No. 4 service rifle which is steadied by a sling round his left arm. The telescope is on a tripod on the firer's left side. He has the 1st finger of his right hand on the trigger. *Gale and Polden Ltd.*

RIFLE SHOOTING FROM THE BACK POSITION

A special match rifle is being used. The fore-sight is under a black protector at the end of the muzzle. The back-sight is mounted on the heel of the butt and has a rubber eye-piece. The firer's head is supported by a harness attached to a sling round his leg. *Gale and Polden Ltd.*

fifty or more people firing at once, and where important competitions are held. International matches are fired against teams from other countries, and teams are entered for the World Championships and the Olympic Games.

Full-bore shooting is carried out on outdoor (open) ranges, 200 to 1,200 yards in length. Much more powerful rifles are used, and the targets are made of canvas covered with paper and stretched on a wooden frame. The aiming mark is usually a black semicircle, the curved side uppermost, or a full circle at the longer ranges. The central circle on the target is known as a 'bullseye' or 'bull'. Unlike small-bore targets, the targets are not replaced when ten shots have been fired, but are repaired with paper patches. The value of the shot is signalled to the firer by a marker, who is protected from being shot by a brick and concrete shelter, covered with earth and sunk in the ground a couple of feet in front of the target. The stop-butt is a high earth bank, usually about 20 yards behind the targets.

Various types of rifles are used in the different competitions, including military rifles as issued to the armed forces or altered under special rules, match rifles, and 'free' rifles. Military rifles are used in competitions designed to test skill in the use of the unaltered weapon, on ranges of up to 600 yards, and are fired from standing, kneeling, or prone positions. The sights used on these rifles do not have a wind-gauge (a device for aiming so as to counteract the force of a cross-wind), because it is argued that there would be no time to use it in a battle.

In the modified military rifles the sights have a wind-gauge which allows very fine adjustments to be made. The improved sighting and the use of a sling for steadying the rifle make it possible to use it at ranges of up to 1,000 yards. It is always fired in the prone position. Match rifles, designed for use at ranges of 900 to 1,200 yards, may be of almost any safe pattern, and their use is encouraged so as to test the design of ammunition in competition conditions at long ranges. They may have a lens in the foresight, and the backsight is often mounted on the butt of the rifle. They are fired in the back position, as shown in the photograph. 'Free' rifles are so-called because the only limitations on their design are that they may not exceed 19½ pounds in weight nor have a bore greater than 99 millimetres. They are the most usual rifles used in full-bore competitions in Europe and South America, and are the only ones used in Olympic full-bore competitions. They are fired at one range only, 300 metres, in three positions, prone, kneeling, and standing. They are extremely accurate.

Full-bore rifle shooting in Great Britain is controlled by the National Rifle Association. Rifle clubs, school contingents of the Combined Cadet Corps, and individuals are affiliated to it, and competitions are arranged in which they compete. These are held at ranges in various parts of the country, the chief meeting, the Imperial Meeting, being held in July at Bisley Camp (the headquarters of the N.R.A.) in Surrey. The Imperial Meeting draws competitors from many parts of the British Isles and

overseas. The chief events in the first week are for service rifles as issued, for match rifles, and for the Ashburton Shield, in which teams of eight from the Combined Cadet Corps of the public schools compete with service rifles. In the second week the chief competition (open to Her Majesty's subjects only) is H.M. the Queen's Prize, the final stage of which is fired by one hundred competitors (the Queen's hundred) on the last afternoon at 900 and 1,000 yards. The winner, the Queen's prizeman, is carried from the range back to the camp on a chair supported on the shoulders of his friends and preceded by a band playing 'See the Conquering Hero Comes'.

See also SPORTING GUNS AND RIFLES; PISTOL SHOOTING.

ROCK CLIMBING, *see* MOUNTAINEERING.

RODEO. In those central regions of North America where cattle-raising is the main industry, there are annual round-ups of the cattle for branding the animals with their owners' names. These are called 'rodeos' from a Spanish word meaning 'go round'. The word 'rodeo' also came to be used for the exhibitions and competitions which are held regularly to demonstrate the skill in the various activities of the ranch. These meetings include competitions in lassoing a steer and throwing it to the ground so that it can be branded. Prizes are offered for horse-breaking and riding, often without the aid of saddle or bridle, untrained mounts or 'buckjumpers'— horses which jump vertically with backs arched, heads down, and feet drawn together. There are also prizes for marksmanship, and even for

A ROLLER SKATER PERFORMING A PIROUETTE
Fox Photos

such accomplishments, not strictly useful, as rope-spinning—making the noose of a 'lariat' (picketing rope) revolve like a child's hoop. Champions from various parts are organized into travelling companies to give exhibitions of their skill in cities remote from 'cattle country'. Rodeos have been seen in England: in 1924, for example, C. B. Cochran brought a rodeo show to the British Empire Exhibition at Wembley.

ROLLER SKATING. Before 1829, when the roller skate was patented in France, more or less in its present form, several inventors had experimented with its possibilities. One of the earliest of these, a musical instrument maker called Joseph Merlin, came to England with the Spanish Ambassador in 1760, and made a most disastrous attempt to popularize the sport. Mounted on his skates and playing the violin, he mingled with the dancers at a fashionable reception. As he could neither stop nor turn, he ran into a gilded mirror worth £500, smashed his violin, and severely injured himself. During the next 40 years new forms of the roller skate were introduced, among them one with copper wheels, and another called the 'volito', which had five wheels arranged in a straight line; but

RIDING A 'BUCKJUMPER' AT THE VISALIA RODEO, U.S.A.
E.N.A.

they failed to attract any public interest. An English skate was invented in 1839, and another variety was shown in the 1859 exhibition at the Paris Opera House; but it was not until 1863, when J. L. Plimpton of New York devised a four-wheeled skate working on rubber pads, that the sport gained any large following. In the 1870's rinks were built all over America; a National Skating Association was formed in England in 1879; and Olympia was opened as a rink in 1890. Originally skate wheels were made of boxwood; now they are of steel with ball bearings. The best rinks are floored with narrow strips of maple wood. Roller skating reached its peak as a world-wide craze at the end of the 19th century and during the first few years of the 20th. Highly competitive championships were instituted for speed, distance, and figure skating; and then, about 1910, with the growing popularity of cars and motor-cycles, it began to die out. Interest in it has revived a little during the last few years, but with the development of 'manufactured' ice rinks, there no longer seems a possibility that it will ever seriously compete for favour with ice skating.

ROMAN BATHS. The practice of attending public baths played an important part in the daily life of the Romans. These baths were not only washing places, but social and cultural clubs where the well-to-do citizens met to take exercise and discuss with their friends literature, philosophy, and current topics of the day.

The Romans inherited the idea of public baths from the Greeks, who built baths near their gymnasia. The fashion spread quickly, and at

A RECONSTRUCTION OF THE ROMAN BATHS OF CARACALLA
AT ROME
From *Architektonische Studien von S. Iwanow*

one time there were 850 baths in Rome alone. The earliest Roman bath of which traces have been found is the Bath of Agrippa (*c.* 20 B.C.), and the most famous and best-preserved are the Baths of Caracalla and Diocletian. Wherever the Romans colonized they built baths, and the remains of several can be seen in England at Silchester in Hampshire, Verulam near St. Albans, and other places; the famous ones at Bath, known as Aquae Sulis, give a good idea of how they were constructed.

The principle of the baths was similar to that of Turkish baths as we know them—they were sweating baths; and in order to produce the necessary perspiration on the bathers, three separate rooms were generally used, each one heated to a different degree of temperature. The heat was produced by 'hypocausts'—raised floors under which air heated by furnaces was circulated. The rooms and courtyards were lavishly planned and were often built of marble. In the Bath of Caracalla the main hall measured 750 feet by 380 feet. From the central hall, which measured 183 feet by 79 feet, doors led to enclosed courts with separate baths for athletes, and to a chamber where poets and philosophers discoursed with each other. There was also a swimming-pool and a gymnasium. A large number of slaves were employed at the baths, both for cleaning them and for attending the bathers. It was normal to receive massage after bathing. Wealthy Romans also built their own baths on a smaller scale near their villas, the remains of some of which can be seen at Folkestone in Kent, Woodchester in the Cotswolds, and several other places in England.

The use of public baths disappeared with the decline of the Empire; and although certain doctors, particularly in Asia Minor, stressed the importance for the health of bathing, it is only comparatively recently that the need for proper baths has been recognized. The Turkish baths and SPAS (q.v.) which we know in England to-day are the direct descendants of the public baths of Ancient Rome.

See also Vol. I: ROMAN CIVILIZATION.

ROULETTE, *see* CASINOS.

ROUNDERS. The recognized rules of rounders were drawn up in 1889. The game is played by two sides of ten players a side. One side bats while the other fields. Three innings are played
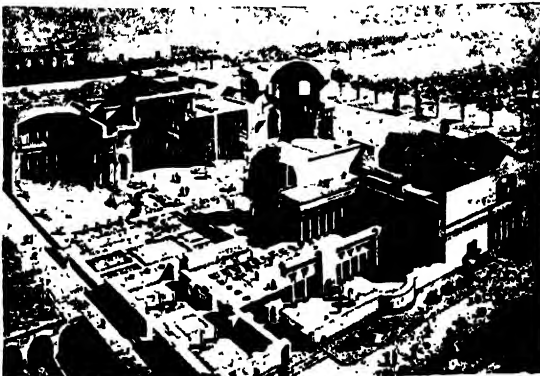
in each game, each player batting once in an innings. A bat and a hard ball are used. Five 'bases', represented by small wooden posts, are placed on a field, generally in the form of a diamond. The batsman stands in front of the home base, and hits the ball tossed to him by the bowler, who stands in a space marked in the centre of the diamond. The batsman must hit and run for every straight ball. He runs to each base in turn until he returns to the home base. Each base counts 1 point. He may stop at any base, but is out if a fielder touches him with the ball between bases, or if the ball is caught.

Generally, however, rounders is played without a strict observation of these rules. Any number of players take part; a soft ball such as a tennis ball may be used; and a score or rounder is usually counted when a player makes a complete run round all the bases without being touched by the ball.

See also BASEBALL.

ROWING is the art of propelling a boat by using oars as levers in the water, each man using one oar. In sculling each man uses two lighter and shorter oars, called sculls. The oarsman drives his feet against a fixed wooden board in the boat called a 'stretcher', and forces back the handle of the oar. If a man were to try to row a boat which was anchored in the water, or tied to the bank, he would drive the blade of the oar through the water, forcing some of it past the boat. The same forces apply when the boat is free, but with a different result. As the boat is not fixed, instead of the blade being driven through the water, it remains more or less stationary, and it is the boat which is moved through the water. If it so happened that, as the oarsman took the beginning of the stroke, he hooked the blade on to a post fixed in the river, then the whole of his effort would go to moving the boat. But in practice the blade slips a little in the water. The faster and harder a man tries to row his blade through the water, the greater is its resistance and the less will the blade slip: instead the boat will be moved all the faster past the spot at which the stroke is taken.

The art of rowing consists in co-ordinating many muscular movements in a rhythmical swing, so that the oarsman's full weight is put into the stroke in a way that is least likely to tire him. In early days boats were heavy, and seats were fixed. The only way to achieve a long stroke was to swing right forward, which was comparatively easy because the oarsman's seat was set well above his feet. With the introduction of the sliding seat, the stroke became longer and seats lower, and it became harder to get such a long swing. It is easy to demonstrate this by trying to swing forward, first sitting on a chair, from which it is easy to swing until the body is almost horizontal, and then sitting on the floor, or on a cushion, from which it is quite difficult to get much forward of the perpendicular. Even so the long swing remained popular for many years, and was the basis of the English orthodox style, which reached its peak in the 1890's and early 1900's.

To row well in this style required a great deal of practice and hard work; but the crews which did it 50 years ago were probably as fast as any to-day. Imperfections crept into the orthodox style, however, and gradually oarsmen found that they could often beat the orthodox crews by lengthening their slides, and relying more on driving hard with their legs, and less on swinging with their bodies. The great exponent of the new style was Steve Fairbairn. It is dangerous to generalize about such a complicated subject, but, roughly speaking, he believed in concentrating on rowing the blade through the water, without bothering about the style of the movements. In this he had much success, for there is no doubt that it is easier
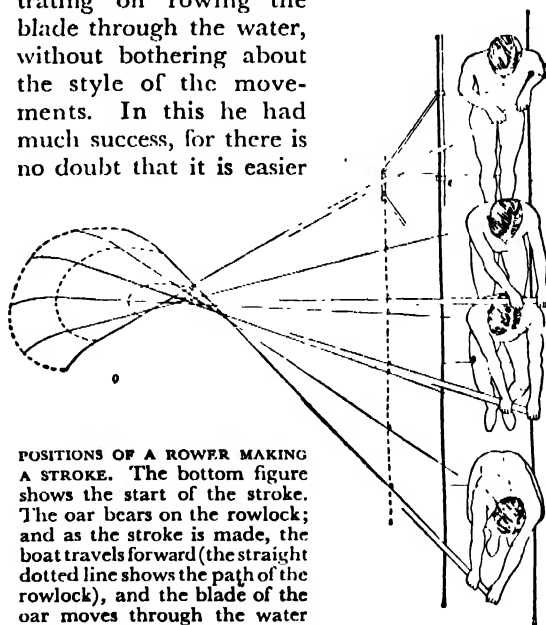
POSITIONS OF A ROWER MAKING A STROKE. The bottom figure shows the start of the stroke. The oar bears on the rowlock; and as the stroke is made, the boat travels forward (the straight dotted line shows the path of the rowlock), and the blade of the oar moves through the water (the movement of the blade is shown by the curved dotted line). The oar moves as if it were pivoted at a point, a quarter of its length from the end of the blade. From G. C. Bourne, *A Text-book of Oarsmanship*
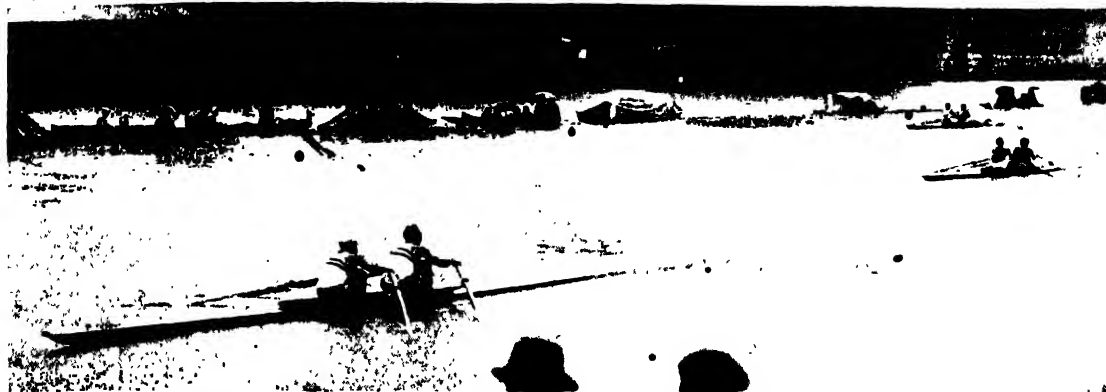
SCULLERS COMPETING AT HENLEY IN THE 1948 OLYMPIC GAMES. *Geo. Bushell & Co.*

to make a crew go fast if they do not have to consider style too much. But it was not long before the orthodox school began to realize their own mistake in paying too much attention to the perfection of the oarsman's movements; and since then both styles have developed side by side. They still exist to-day as distinct methods of approach.

Rowing in other countries has developed along similar lines, except in the United States, where they have developed a somewhat different style —rather rigid and highly-drilled—which concentrates on a tremendously strong pull at the finish of the stroke. It is very successful, but calls for a different sort of training, and a different rig from that used in this country.

Only long and gradual practice can teach a man how to row; but the technique can be briefly described. The time during which an oarsman is sliding and swinging forward is the time of rest, and should occupy about two thirds of the time taken for the whole stroke. The head should be up, and the body upright but relaxed; feet should be firmly planted on the stretcher; and the hands should be firm, but not gripping the handle of the oar, about 4 or 5 inches apart. All the time the inside hand should press outwards, keeping the 'button' of the oar well up against the rowlock (the 'button' is a leather ridge which prevents the oar slipping through the rowlock). The oarsman should pay no attention to the slide, which will be dragged up by the forward swing of the body. As the body swings past the perpendicular the knees begin to rise, and all the time the feet press more firmly against the stretcher. As the hands come over the feet the inside wrist rolls forward, thus

squaring the blade ready for the stroke. The oarsman approaching the forward position is like a spring, coiled up against the stretcher, and poised for the spring back.

When the human spring is fully coiled the oarsman is ready for the beginning of the stroke. As he begins the stroke his hands rise, dropping the blade of the oar into the water; his legs drive his feet into the stretcher; and his body springs back off the knees. This all happens within a split second, so that the movements are instantaneous. The knees go on driving down, and the body goes on swinging back, and after the first shock of the beginning the arms begin to draw as well. In the perfect stroke all three will finish together, knees flat, body swung back just past the perpendicular, upright but not stiff, and hands drawing the oar handle into the chest, with elbows past the sides.

As he reaches the finish the oarsman drops his hands to lift the blade out of the water, drops his wrists to turn the blade on to the 'feather' (that is, horizontal to the water), and straightens his arms. Once again this is a simultaneous movement. There is no check at the finish; the straightened arms travel on forward, and the body swings over through the perpendicular. The knees rise, and the oarsman is once again at rest and gathering himself for the next stroke.

There is no essential difference in the technique of sculling. The movements of a good sculler are the same as those of an orthodox oarsman, but greater smoothness and precision are called for. The beginning cannot be taken so fiercely as in rowing, because the boat is moving more slowly, and the sculler consequently finds a

greater resistance to his work. When at right angles to the boat, the scull handles overlap by several inches, and to overcome this the sculler keeps one hand slightly below and forward of the other.

Precision of timing in a crew is achieved by watching the back of the man in front, or the button of stroke's oar; with practice it becomes instinctive. The oarsman who sits nearest the stern sets the time; he is called 'stroke', and his oar is normally out on the right (starboard) side of the boat, so that the right side is called the 'stroke side', and the left (port) side, the 'bow side'. The responsibilities of stroke are the most important, for he must decide how fast a stroke to row, when to spurt, and when to ease: he is in effect the captain of the boat. The 'coxswain' or 'cox' steers the boat, and he sits sternmost working the rudder by means of two lines (except in coxwainless boats, when one of the oarsmen works the lines with his feet). In addition the cox gives all words of command; he calls the time, and he gives the order to start and stop ('paddle' and 'easy' as it is called) during practice. He is normally chosen for his light weight. The oarsmen in the middle of the crew on the other hand should be of reasonably heavy weight, to give momentum to the boat and to produce strong and continuous driving power.

The boats in which men have rowed have developed considerably in the course of two centuries. The early boats were heavily built and inrigged; that is to say their rowlocks were built into the side of the boat and not mounted on brackets called 'outriggers', as they are to-day. The date when outriggers were invented is uncertain, but they were first used in the Oxford and Cambridge Boat Race in 1846. Their importance was great; for they made it possible to build narrower and lighter boats, while preserving the leverage which can only be obtained by the oarsman sitting at a distance from his rowlock. To compensate for their narrowness boats had to be built longer, thus giving more room to each man, and this, together with the fact that outriggers gave greater leverage, soon brought about a longer stroke. Then men found that they could increase the length of their stroke still further by sliding on their seats. Soon they began to polish them for that purpose. The next step was the introduction of a little wooden seat that slid on bone runners; and before long this was followed by the seat

running on wheels, as we know it to-day. This sliding seat was first used in the Oxford and Cambridge Boat Race in 1873. Since then there has been remarkably little change in the design of boats. Experiments have been made with longer and narrower and shorter and broader boats, and with round and flat bottoms. But nothing has been found to make any radical change in the design of racing craft in the past 75 years.

See also BOAT-RACES; OXFORD AND CAMBRIDGE BOAT-RACE.

RUGBY FOOTBALL.

This game is played between two teams of fifteen players, and consists of two periods of not more than 40 minutes each, with an interval for half-time. The game is controlled by a referee, with the assistance of two 'touch' judges to mark the side lines. It is played on a pitch marked out as in Fig. 1, with an oval ball weighing between $13\frac{1}{2}$ and 15 oz. and measuring 11 to $11\frac{1}{4}$ inches long. Subject to a recognized code of laws, the ball may be kicked, dribbled, carried, or passed from hand to hand. As in ASSOCIATION FOOTBALL and HOCKEY (qq.v.), the basis of its rules is the offside law—any player who gets himself into an offside position can, while in that position, take no part in the game, either by playing the ball himself or by interfering with an opponent. Broadly speaking, to remain 'onside' a player must always be behind the ball, or behind a man of his own side who is carrying it. This means that a pass from one player to another must always be made in a backward direction: a straight pass is counted as a forward pass. A player who is running with the ball in his arms may be 'tackled' by one of the other side, that
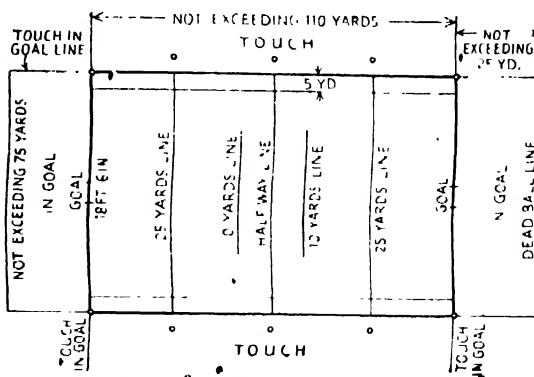

FIG. 1. THE RUGBY FOOTBALL FIELD

A SCRUM IN THE ENGLAND *v.* SCOTLAND MATCH AT TWICKENHAM IN 1947
An English player makes a flying pass out from the scrum
Sport and General

is to say, he may be grasped round the body or legs and put to the ground.

The object is to win points by scoring 'tries' or goals, the side with the most points being the winner. Points are scored in the following ways.

The primary object is to score a 'try', which is obtained when one of the attacking players grounds the ball in his opponent's 'in-goal', that is, behind the goal line. When a try has been scored the attacking side try to 'convert' it into a goal. The ball is carried to any suitable spot in line with the place where it went over the goal line, where it is 'placed' for a kick at goal. This kick, which can be taken by any member of the scoring team, must send the ball over the cross-bar and between the uprights, without touching the ground or any of the opponents. The opposing side must remain behind their own goal line until the ball is actually placed on the ground; then they may rush out to attempt to charge down the kick if they can. A try counts 3 points, and if it is 'converted' an additional 2 points are scored. 3 points are also scored for a 'drop goal' made by a player who in the course of play is able to drop the ball to the ground from his hands and, as it rises from its first rebound, kick it over the goal cross-bar.

The referee may order a 'penalty kick' as a penalty for a foul by the defence, and this may be either a placed or a dropped kick. If the attack succeed in kicking a goal 3 points are scored A goal scored from a 'fair catch' (or 'mark') also counts 3 points. If an attacking player succeeds in making a catch from a kick or throw forward by one of the opposing team,

he may claim a 'fair catch' by making a mark with his heel in the ground as he takes the catch. He is then allowed a free kick from that spot. Finally, a 'penalty try' may be awarded, though this rarely happens, if in the opinion of the referee a try has been prevented by foul play on the part of a member of the defence. This counts 3 points.

A modern team usually consists of a full-back, four three-quarters, two half-backs, and eight forwards. The forwards are called the 'pack' or 'scrummage'. The three-quarter line is made up of right wing, right centre, left centre, and left wing. The halves are known as the scrum half and the outside or stand-off half. The pack generally consists of three front row forwards, with the 'hooker' in the centre, two second row, and three back row men. The full-back places himself behind the three-quarter line according to the run of the game. He is generally a defensive player, though he may join the three-quarters when they are attacking. The players do not, as in association football, keep more or less strictly to certain areas of the field; but the whole side takes up temporary positions in accordance with the position of the ball. The shape of the game is continually changing as the attacking side tries to make gaps in the opponent's defence.

The team winning the toss usually chooses the end, and a member of the other team starts the game by kicking the ball off from the centre spot on the halfway line. This kick must travel at least 10 yards forward before it is touched. The game is re-started in this way after a goal has
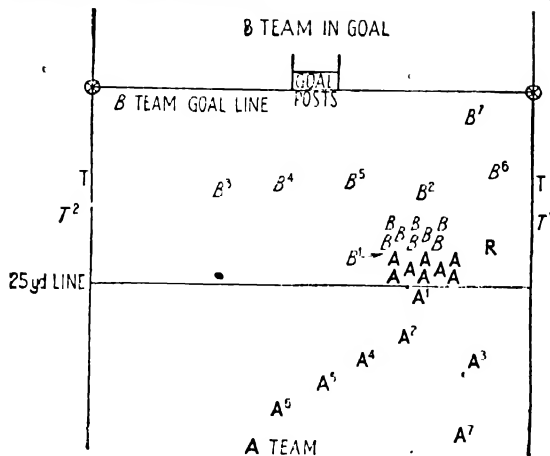
FIG. 2.

been scored. After a try which has not been converted, the re-start is made by one of the defence taking a drop kick. If the ball is either touched down by a member of the defending team behind his own goal line, or is kicked dead by an attacker over the dead ball lines (see Fig. 1), the game is re-started by a drop kick from the 25-yard line. If the ball goes 'into touch', that is to say, over the side lines, the eight forwards of each side form into two lines at right angles to the touch line at the spot where the ball crossed it. The ball is then thrown in by a player (usually the wing three-quarter) from the team which did not put the ball into touch. Serious faults, such as being offside or dangerous tackling, are penalized by a free kick. For all minor breaches of rules, such as a pass, knock, or throw forward, the referee orders a 'scrummage' or scrum on the spot where the foul took place. This scrummage is perhaps the most characteristic feature of rugby football. The packs of forwards bind together, usually in three rows of three, two, three. The two front rows interlock their heads and shoulders with those of their opponents, and the remaining two rows put their shoulders against the buttocks of the men in front of them. The ball is then rolled into the gap between the front rows by one of the scrum halves. The hookers each try to hook the ball back through the rest of their own pack. The scrum half waits at the rear of the scrum, and when the ball appears he may throw it out to his partner at stand-off half, or he may decide to kick ahead, or kick for touch, or to try to break away on his own. At the moment the ball

leaves the scrummage the opposing side moves up very rapidly, each man marking his opposite number, so that he may tackle him as soon as he receives the ball. The wing forwards of the pack try to assist their backs in their spoiling tactics. The attackers try to 'draw' their opposite numbers upon them before they pass the ball, waiting to pass until they are just about to be tackled. Passes must be given with speed and accuracy. Fig. 2 shows the position that two teams would normally take up when a scrum had been ordered near one of the goal lines.

When a player is checked and perhaps brought to the ground by a tackle, the two packs of forwards may form round in a 'loose' scrum, and try to get the ball back with their feet to their own scrum half, who will again either try to break through on his own, or pass back to his three-quarter line.

Another feature of the game is the 'punt', a kick which is made by letting the ball fall from the hand and kicking it before it touches the ground. This type of kicking is in continual use throughout—for kicking ahead or across the field in attack, or for using the touch line in defence, or for gaining ground.

RUGGBY FOOTBALL, HISTORY OF. It is not possible to give a definite date of the origin of football. There are references in ancient history to a game played by the Greeks and Romans which probably resembled our modern football, and it is not impossible that Roman soldiers introduced their own particular version into Britain at the time of the Roman Conquest. Certainly some type of ball game, played between two sides of varying numbers, has been in existence in Britain for many hundreds of years. In Tudor times matches were sometimes played on public holidays between rival towns or villages, often with teams of over 1,000 a side. The 'goals' in some cases were local caves or even pools in the bed of a stream. A small ball was used, known as the 'knappan', and the object was to carry the knappan (sometimes even on horseback) towards the goal. Passing the ball from one person to another was known as 'dealing the knappan'. The ball was very hard, and it was probably not customary to kick it. The player who was tackled and refused to part with the knappan was liable to be persuaded with cudgels or even lumps of rock, so that it is hardly surprising that a 16th-century writer, Sir
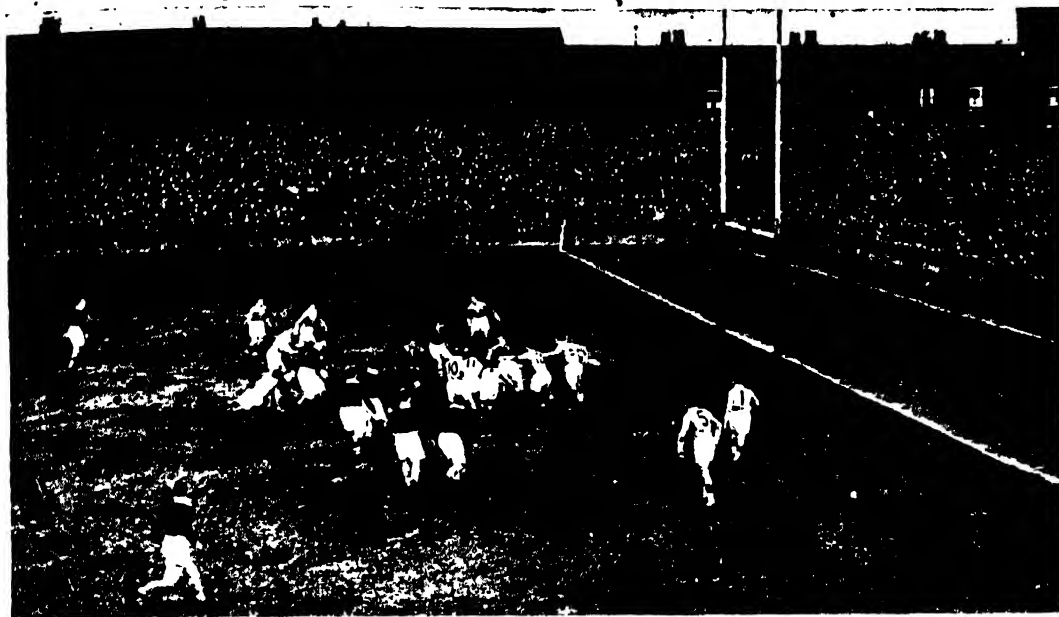
RUGBY LEAGUE MATCH BETWEEN ENGLAND AND FRANCE AT SWINTON.   *Keystone*

Thomas Elyot, described the game as 'nothing but beast-like fury and extreme violence whereof proceedeth hurt'.

The real beginning of the modern game is always attributed to William Webb Ellis, a boy at Rugby School, who, in 1823, 'first took the ball into his arms and ran'. In due course the game appeared at Cambridge University, and in 1848 a meeting took place which tried unsuccessfully to establish a code of laws. One of the schools which had followed Rugby's example was Blackheath, and the Old Boys of this school started a side of their own called The Old Blackheathens. In the games between the school and this Old Boys' Club the supporters of the latter replied to the shouts of 'School' with countercries of 'Club'; and when in 1862 the Old Blackheathens turned themselves into the Blackheath R.U.F.C., the first recognized club in the game, this cry of 'Club' stuck to them, and is still heard wherever their red and black jerseys are seen on the football field.

Other clubs followed the example of Blackheath, Richmond being founded in 1863, Manchester and Bath in 1865, and the Harlequins and Wasps in 1867. The first recorded club game took place between Blackheath and Richmond in the 1863–4 season. In 1871 the Rugby Union

was formed in London by a group of twenty-one clubs, and in the same year the first International game took place in Edinburgh between England and Scotland. Unlike the modern teams, these teams had twenty players on each side, consisting of thirteen forwards, three half-backs, one three-quarter, and three full-backs. In 1874 Ireland played against England and Scotland for the first time, and in 1880 Wales played England for the first time at Blackheath. With a few interruptions this international programme has been continuous, and every year the struggle for the 'Triple Crown' takes place. The 'Triple Crown' is won by the country which gains three clear wins, a feat which is not often accomplished. The annual match between England and Scotland has an additional attraction of being played for the Calcutta Cup, which was presented for this purpose by the Calcutta Rugby Football Club when it disbanded in 1879. In 1895 an organization, later known as the RUGBY LEAGUE (q.v.), broke away from the Union over the question of payments to players, and formed its own variation of the game. In 1905 France began to play the four home countries at rugby, and matches continued until 1931, when, owing to disagreement among the rugby clubs in France, international matches

were discontinued. They were, however, re-started during the Second World War, when the British Army met the French Army in Paris. Gradually the number of players in each team has been reduced from the original twenty. In 1877 the sides were reduced to fifteen, although it was not until 1892 that the present three-quarter line of four players came into fashion, chiefly through the initiative of the Cardiff Club.   •

As well as home internationals, there have been many visits by teams from abroad and reciprocal tours made by home teams. The first side to visit Britain were the New Zealanders in 1888. Since then South African teams (known as the 'Springboks'), Australian, Argentinian, and Canadian teams have all toured Britain.

RUGBY LEAGUE FOOTBALL. The Rugby League, first called the Northern Union, broke away from the Rugby Union in 1895, owing to a dispute over the question of payment to players who could not afford to take time off from their work to play for their country, county, or club. The League differs from the Union both in organization and in rules. It is still mainly a Yorkshire and Lancashire formation, though League football is now also played in France, Australia, and New Zealand.

The majority of players in the Rugby League are professional, and receive payment for those games in which they play. They are, of course, entitled to have regular jobs as well as playing football. The League, however, disapproves of the exchange of players from one team to another at very high prices, as is the custom with ASSOCIATION FOOTBALL LEAGUES (q.v.). Amateurs also play in League football, but if they do they are banned from playing with Union clubs. In League football the competitive aspect of the game is stressed more than in Rugby Union. There are two main annual events, the League Challenge Cup and the League Championship. In the Championship the clubs in each county play each other and five fixed outside matches are played; then the four clubs with the most points play the semi-finals and finals on a knock-out basis. The Challenge Cup is a knockout event, the final being played at Wembley.

Rugby League rules differ from those of Rugby Union in the following ways. In League football the team consists of thirteen players instead of fifteen, there being six forwards instead of eight. It is considered that kicking for touch wastes time unnecessarily so that, unless the ball bounces before going into touch, a scrum is ordered at the point where the kick was made. There is also a difference in the tackling rules, for in League football, when a man has been tackled, an interval is allowed for him to rise and drop the ball before play can be continued. Any scoring of a goal, whether it is dropped or placed as a result of a penalty, is worth 2 points, and a try when converted is called a 'goal and a try', and counts 5 points in all.

Rugby League players have developed a very fast and spectacular game. It is rare to see a first-class player drop the ball. Solid scrummaging, however, with its controlled scientific pushing and long and accurate touch finding, is not characteristic of the League game, as it is of Rugby Union.

See also RUGBY FOOTBALL.

RUNNING, *see* ATHLETICS, TRACK EVENTS.

S

SAILING. The principle of sailing is the use of the forces, firstly, of wind on a boat's sails and secondly, of water on her hull, in order to drive her in any required direction. This applies equally to all types of boat or rig. When the boat is sailing with the wind behind her (Fig. 1a), the water resists her very little, because of her streamlined shape. When the wind is blowing on the bow (Fig. 1b), part of its force (P 1). acts directly at right angles to the sail, and so tries to push the boat forward and sideways. She would move mainly sideways, like a crab, if it were not for the water acting along her whole hull to resist this movement. Its effect is increased by the presence of some kind of keel, which must be fitted in all sailing boats; in dinghies it generally takes the form of a thin plate of metal or wood, known as a centre-board or drop-keel, which can be raised when not required. In this way the water is made to resist the sideways movement so strongly that it is practically eliminated and, as there is no corresponding resistance opposed to her forward movement, the boat goes forward. She is helped in this also by another part of the wind (P 2) which blows along the sail and, being accelerated, creates an equal reaction in the opposite direction, in much the same way as a jet is used to drive an aircraft. The relative effect of wind and water on a boat can be varied by changing the angle
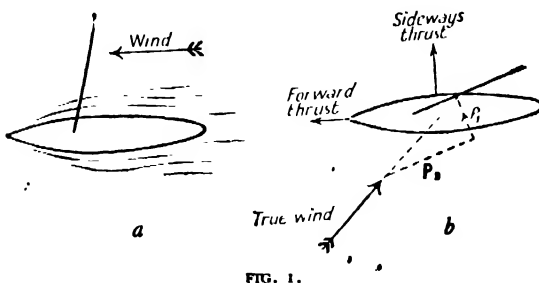
of sail to hull, by hauling in, or by easing out the 'sheet' (a rope attached to the lower after corner of the sail, or to its boom); and of rudder to hull by means of the tiller. The rudder and tiller work in opposite directions; thus, if the helmsman wishes to turn away from the wind, he must draw the tiller towards it (this is called 'putting the helm up'). The rudder is pushed in the opposite way, to leeward, and the increased resistance acting on that side of the boat turns the boat's head away from the wind (see Fig. 2). The opposite process, to turn the boat's head up into the wind, is called 'putting the helm down'.
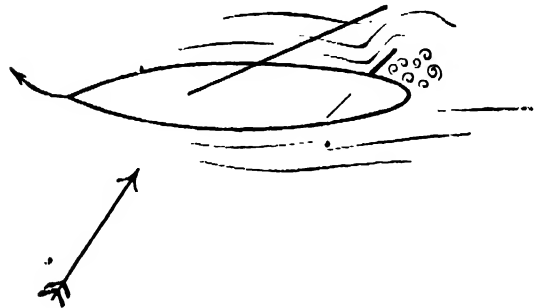
FIG. 2.

The forces of wind and water act in the vertical as well as the horizontal plane. The wind blowing on the sail alone would capsize the boat if it were not for the resistance of the water acting on hull and keel, and the gravitational pull of weight in the boat. The broader the hull, the deeper the keel, and the heavier the weight (provided it is at the bottom of the boat), the more stable will the boat be (see SAILING BOATS). What she gains in stability, however, she will lose in speed. The helmsman's task is to manipulate his tiller and sheet in such a way that wind and water combine to drive the boat forward at the greatest speed compatible with stability.

How is this done in practice? If it is desired to sail as 'close' to the wind as possible (that is, in the direction from which the wind is blowing), the sail must be brought close to the line of the hull. If it is brought quite parallel to the hull the boat will lose speed, for the main part of the wind's force which drives her forward will be lost. The right position must be found by experience: it will be approximately over the quarter in most cases. If the boat's head is pointed directly at the wind the sails will flap idly and the boat will lose steerage way. A boat in this position is said to be 'in stays' or 'in irons'.

FIG. 1.

This is a position of momentary equilibrium, since the vertical turning effect is nil; but it is not a very secure position, since a sailing boat, which is stopped and is drifting, is out of the helmsman's control and peculiarly vulnerable to any sudden squall which may catch her as she is beginning to 'pay off' or move away from the wind. As she does pay off she will gather way; how soon this happens will depend on the shape of her hull and the efficiency of her sail plan. Generally the angle between her head and the wind when she is sailing close-hauled will be between 40 and 60 degrees.

Close-hauled sailing is the most exhiiarating point of sailing, and that which demands most of the helmsman; but it is probably the one best suited for a beginner, for it shows quickly and clearly the effects of his actions. As the wind freshens so the helmsman must 'luff', or sail closer to the wind, in order to reduce the excessive pressure on his sail which is tending to overturn the boat; as it eases he must put his helm 'up' a little to turn his boat away from the wind, so that his sails are kept full. As the wind is always varying in strength, so he must always be sensitive to its changes, either by watching the edge of his sail for signs of flapping, or by feeling the pressure of the sheet on his hand. The quicker his responses are, the less helm he will need to use: violent movements of the tiller are nearly always an indication of bad helmsmanship. It is a common fault to try to sail too close to the wind; it is better that the sails should be kept full and the boat moving fast a little farther off the wind (sailing 'full and by') than to 'pinch her' with the sails not full and the way checked.

As a boat cannot sail directly into the wind it is obvious that if she wishes to go dead to windward she must pursue a zigzag course doing a number of legs or 'tacks', since no single tack will take her to her destination (Fig. 3). Such a boat is said to be 'tacking' or 'beating', on the starboard or port tack according to whether the wind is blowing from her starboard

(right) or port (left) side; and the process of changing from one tack to another is called 'going about'. The right method of doing this is to haul in the sheet of the mainsail, so as to increase the turning effect, and at the same time steadily to move the tiller away from the wind, or 'down', so that the boat's head is sailed gradually through the wind till the sail fills out on the other side. If the manoeuvre happens too violently the way is taken off suddenly, the boat loses ground, and becomes vulnerable to a sudden squall on the new tack; if it is done too slowly her head may never get round at all, and she remains 'in irons', drifting to leeward with head to wind and sail flapping. Some sailing ships in the old days were so constructed that in a strong breeze they could never go about in this way; they were forced instead to turn and 'wear', or go about stern to wind, thus losing a great deal of ground. If a boat which has been beating to windward wishes to turn and sail farther off the wind, she must ease out or 'check' her sheet at the same time as the helm is put up (see Fig. 2). This will have the effect of easing the pressure on the mainsail and allowing her head to go away from the wind; if it is not done, the full force of the wind is brought to bear on the sail at right-angles to it, and in a strong breeze the boat will capsize. Sailing off the wind differs in principle from close-hauled sailing; whereas in the latter case the helmsman holds his sheet steady, and steers with the tiller to keep the boat always close to the wind, in the former case it is the tiller that should be steady, while the helmsman adjusts his sheets to keep the boat to her chosen course at the best possible speed. In both cases he must be sensitive to the continual changes in the wind's direction and strength.

A wind on the beam, that is, at right angles to the boat's intended course, is known as a 'soldier's wind', because no beating is needed for sailing in either direction. A boat sailing with such a wind is said to be 'reaching': this is the fastest point of sailing. With the wind from behind or 'abaft' the quarter, a boat is said to be 'running free'; her sail will then be more or less at right-angles to her hull, and to increase speed she will raise her centre-board, because the resistance to the water which it offers is no longer needed to keep her from going to leeward. This is the most peaceable point of sailing but not the least tricky; the helmsman must be vigilant to see that he does not put his boat too

Close-hauled on starboard tack

Wind
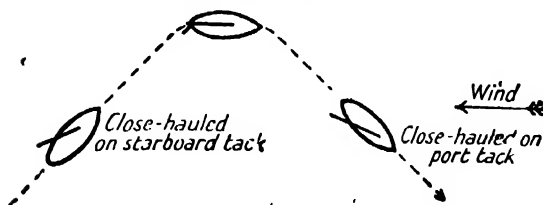
Close-hauled on port tack

FIG. 3.

far away from the wind. If he does the wind may suddenly come from the other side of his sail, and blow it across with such violence, that, in a strong breeze, it can dismast the boat as well as cracking the heads of the crew. Such an event is an involuntary 'gybe'; but deliberate gybing (the process of going about stern to wind) is a normal operation, perfectly safe in anything but a very strong breeze. The helmsman who suspects that he is about to gybe involuntarily should haul in his sheet with all speed to get control of his sail at the earliest possible moment.

The foregoing remarks have been made with a single mainsail in mind; they apply equally to a boat fitted also with a foresail or jib. A boat generally pivots about her mast; a mainsail sheeted in hard will tend to force her nose into the wind, while a jib hauled aft will have the opposite effect. When turning into the wind, therefore, it is necessary to ease out the jib at the same time as the mainsail is hauled in. In a boat running free, the jib will often be idle, its wind taken by the mainsail; in these circumstances, therefore, racing yachts sometimes set a spinnaker or balloon jib on a spar put out on the weather side.

Most boats have their sail plan so balanced that they tend naturally to turn into the wind, and are said to carry 'weather helm', because the tiller must be put up a little to keep them away from it. Such boats are the safest.

When the wind is very strong it may become necessary to reduce the sail area exposed to it; this is done by 'reefing'. In the past this always meant gathering a fold of sail at the bottom and securing it by means of laces, known as reef points, fixed in the sail. They were tied with a 'reef knot'—hence the name. Nowadays many yachts are fitted with rolling devices for reefing.

In addition to sailing his boat in the right direction at the best possible speed, a helmsman must know what to do if he meets other boats. An international code of rules has, therefore, been devised, the basic principle of which is that the boat which can most easily manoeuvre keeps out of the way of one less able to do so. Thus a power-driven boat normally has to give way to a boat under sail, and a boat under oars to both. If both boats are under sail, the overtaking boat has always to avoid the overtaken; the boat running free gives way to the boat sailing close-hauled; the boat to windward to that to leeward. If both are close-hauled on opposite tacks, that on the port tack gives way to that on the starboard. Yachts when racing follow a more elaborate and slightly different version of these rules.

See also Dinghy Racing; Yacht Racing.
See also Vol. IV, Sailing; Nautical Terms.

SAILING BOATS. The many types of pleasure sailing vessels now afloat can be divided roughly into three classes. The smallest is the sailing dinghy. Then come the slightly heavier sailing vessels of from 15–20 feet in length, fitted either with centre-board or keel, many of which are only half-decked, cabinless 'day boats'. Last come the innumerable types of seagoing yachts with cabins—from converted fishing vessels used for cruising to out-and-out racers. The efficiency of all these, considered simply as sailing machines, depends upon two factors, the shape of their hull and the arrangement and shape of their sails.

There are three main points about the hull. The longer it is in proportion to its beam or width, the faster the boat will sail. Too narrow a hull makes a boat lack stiffness, or ability to right itself; too broad a one may make her slow and give her an uneasy motion. The designer must compromise: yachts which require speed more than seaworthiness will tend to be narrower and have greater overhang than fishing or other general-purpose boats which must be able to stand up to all weathers. Secondly, a boat's stability and speed will be much affected by her draft (the depth between her keel and the water line). A deep draft gives ability to beat to windward; a shallow one gives speed over the water, and is obviously suitable for the shallow waters found in so many of our estuaries. But a shallow draft does not make for stiffness and, to obtain this in all conditions of roll, it may be necessary to fit ballast or heavy weights at the bottom of the boat. Cruising yachts need to sacrifice some speed for the sake of seaworthiness and roominess below, and so tend to have a larger beam and draft than racers. Thirdly, the underwater profile of a boat's hull as seen from broadside on has much to do with her sailing efficiency. The best shape for a given purpose is a matter of controversy among designers. Very broadly a long rectangular keel makes for sluggishness in response to movements of helm, while too short a one gives too little grip on the water to ensure that a boat can readily be put about or sailed well close-hauled. Most modern yachts com-

promise, having a more or less triangular shape with the deepest point fairly well aft (*see* Fig. 1).

There are two principal methods of building the hull of a boat, and they vary according to its size and the tradition of boatbuilding in the locality. One is the method of 'clencher' or 'clinker' building, whereby the planks are made to overlap; this is a strong method, and is thought to make for stability, but it is only suitable for small boats. The alternative is the method of 'carvel' building, with the planks laid edge to edge with only a narrow V-shaped space between left for caulking; this is the one generally favoured for racing yachts of any size. A third method, the 'diagonal', is used in the construction of certain types of naval boat; it is a form of carvel building with the planks running diagonally up the boat's side and a similar inner layer with the diagonal laid at right angles. The material for planking is commonly teak or pitch pine for cruising yachts or fishing boats; and mahogany for lighter boats built especially for speed.

In choosing his sail plan the designer has to compromise between the conflicting claims of

stability and handiness on the one hand, and speed on the other. To sail fast, a boat needs a large area of canvas, which requires a tall mast and big spars; these, however, as well as being difficult to handle easily, make for instability, unless a deep keel and much ballast are fitted.

The simplest form of rig is the single 4-cornered sail, stretched on a yard (spar) suspended about a third or a quarter along its length. Such a sail is called a lugsail (*see* Fig. 3 (1)) and is widely used in fishing boats and dinghies, because of its simplicity, and the ease with which it can be handled. Provided the mast is stepped well forward, a useful sail area can be set without the need for a tall mast or long spars, or even stays to support the mast.

The next step to increase the sail area involves the addition of a headsail, or foresail, before the mast. Because the mast is already far forward this generally means adding also a bowsprit, to which the forestay carrying the headsail is secured. A boat with mainsail and single headsail is called a 'sloop'; that illustrated in Fig. 3 (2)) is called a 'lugsail sloop'. This rig is commonly found among half or quarter-decked 15–20 foot dinghies or fishing boats.

A more normal type of rig, however, for boats with one or more headsails is the 'gaff rig', the gaff being a short yard whose foremost end is attached to the mast by a movable clamp called a traveller. Until the 1920's the gaff rig, with its short pole mast and long bowsprit, reigned supreme in this country even for racing, the larger racing craft being principally gaff cutters (Fig. 3 (3)). A cutter is, by British definition, a ship with a mainsail and two headsails, one of which is called a staysail and the other a jib. Other varieties of the gaff rig were sloops, yawls, ketches, and schooners. A sloop (Fig. 3 (8)) has a single headsail. Both a yawl and a ketch have a second sail similar in shape to the mainsail, but of course very much smaller, set on a short rear mast known as a mizzen mast, from which the sail takes its name. The technical difference between the two is that with a yawl (Fig. 3 (5)) the mizzen mast is abaft (to the rear of) the tiller, and with a ketch (Fig. 3 (6)) it is for'ard of it. In the schooner, which should perhaps be regarded as a small ship rather than a large boat (schooners seldom displace less than 12 tons), the aftermast, stepped well forward of the tiller, is the larger of the two and, therefore, known as the mainmast.

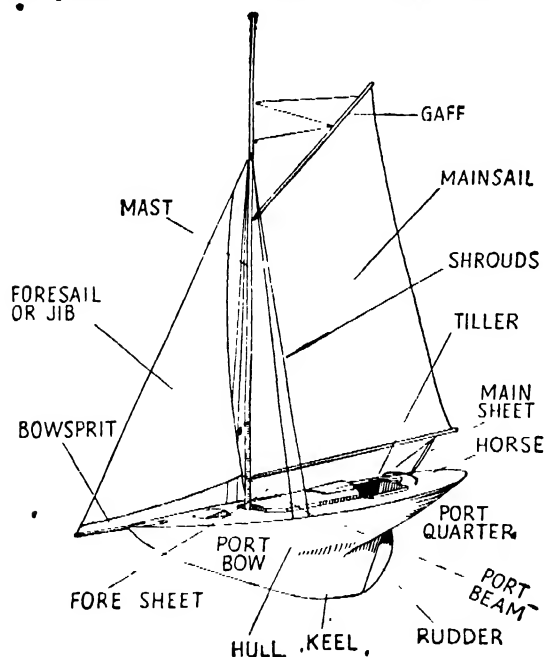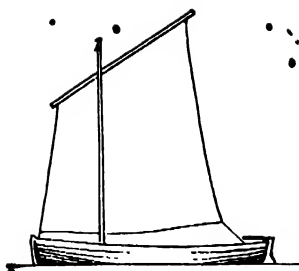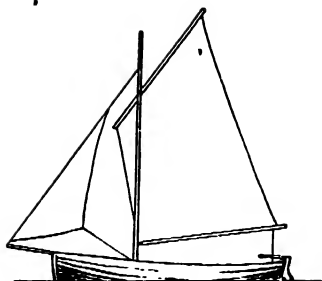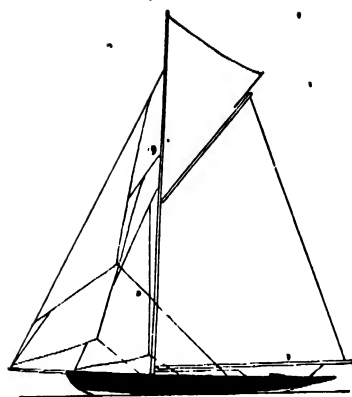FIG. 2.
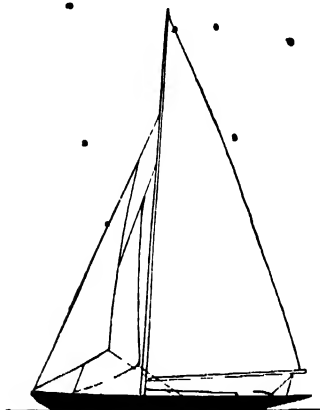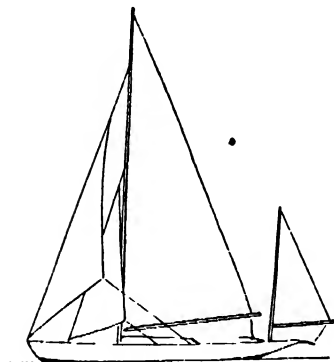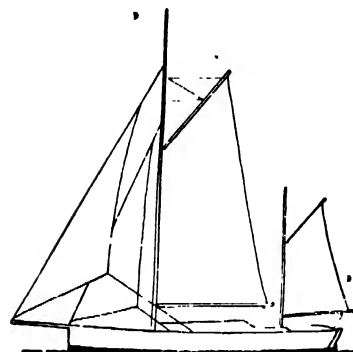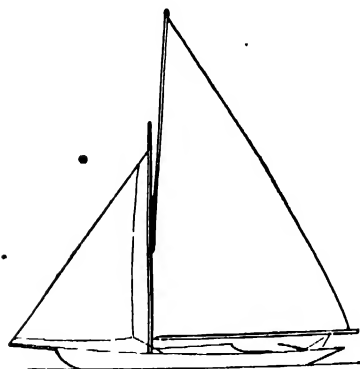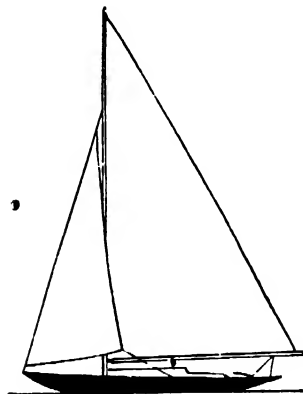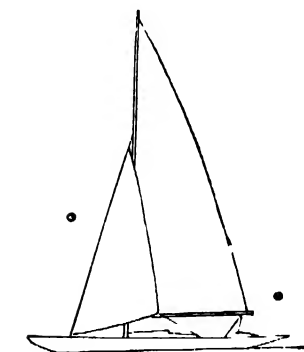
FIG. 3.

(1) LUGSAIL.   (2) LUGSAIL SLOOP.   (3) GAFF RIGGED CUTTER.   (4) BERMUDA RIGGED CUTTER.   (5) BERMUDA RIGGED YAWL.   (6) GAFF RIGGED KETCH.   (7) SLIDING GUNTER RIGGED SLOOP.   (8) BERMUDA RIGGED SLOOP.   (9) 30 SQUARE METRE.

A variation of the gaff rig, which is still used, although it has never become widely popular, is the 'sliding gunter rig' (Fig. 3(7)). In this rig the sail is so cut that when the gaff is hauled up it lies alongside the mast and towers above it, instead of lying out from it at an angle of about 45 degrees as with the gaff rig. The result is to give a triangular sail, not unlike a Bermuda mainsail in appearance. Since its head is higher than a gaff mainsail's, it gives better windward sailing; but the great weight of its fittings and gaff make it unsuitable for any but comparatively small craft. It has great advantages for river sailing, since it gives a tall sail which can find a wind above the banks better than the normal gaff mainsail, but which can still be dropped to pass under bridges.

The 'Bermuda rig' began to be used for racing craft in the 1920's, and its obvious supremacy for windward work soon made it popular. It consists of a triangular mainsail set on a mast which is considerably taller than the length of the boat, and it has been remarkably successful in the past 20 years. Almost all racing craft and the majority of modern cruising craft are now so rigged. Bermuda rigged yachts may be sloops (Fig. 3 (8)), cutters (Fig. 3 (4)), yawls (Fig. 3 (5), or ketches. A modern and most welcome innovation is the abandonment of the bowsprit. A ship so rigged is known as a 'stemhead' sloop or cutter, from the fact that the forestay is anchored to the stemhead.

A new style of rig began to appear just before the Second World War, principally upon ships such as the 30 square metre class, imported from Sweden. With their tall, narrow mainsails, short booms, and headsails stayed well inboard of the stem and sheeted so as to overlap the mainsail, they are as complete a contrast as possible to the gaff-rigged vessels of the last century. A typical 30 square metre is shown in Fig. 3 (9))

See also SAILING; YACHT RACING; DINGHY RACING.
See also Vol. IV, SAILING SHIPS.

SAILING REGATTAS. 'Regatta' was originally an Italian word meaning 'a struggle for mastery', and was first used in English in connexion with some boat-races held on the Grand Canal of Venice. In England the word has now come to be applied especially to those annual series of boat-races which are important as social events, such as Cowes Week, a sailing regatta, and Henley Regatta, a rowing regatta. All yacht clubs hold races throughout the season, and many hold them every week-end. But once a year each organizes a special series of races, known as its regatta. At this all the year's championship races are held and it may occupy anything from a day to a fortnight. In former times, when the big racing yachts were seaworthy craft, the racing fleet would sail round the coast, taking part in successive regattas, the giant yachts providing a spectacle which added to the zest of the local races. Nowadays, most regattas are local functions devoted to races of the principal classes based in the district, and the bigger vessels attend only a few of the more important ones, to which they have to be towed by power vessels.

The most famous of these regattas is Cowes Week, which is organized jointly by the many Solent yacht clubs. It is normally held about the first week in August, and usually begins on a Saturday, continuing until the following Saturday. Cowes Week has been for many years the most important social occasion of the yachting season. Cruising yachts come from near and far, and Cowes Roads during the Week present a wonderful spectacle.

The second great regatta is the Clyde Fortnight, held annually in July. This series of races provides fine sport in magnificent surroundings, and, as those who know Scotland may well imagine, the weather usually does its best to provide variety. The competition among Clyde yachts is keen, and classes such as the '6 metres' and the 'Dragons' are more numerous there than in southern waters; so that from the purely racing point of view the Clyde Fortnight is probably a better spectacle than Cowes Week.

There are so many other regattas that it is difficult to single out any for special mention; but Burnham Week is worthy of notice as the premier East-Coast event, and also in a sense the Londoner's own regatta, for the majority of the London yachts are moored there.

See also SAILING; YACHT RACING; DINGHY RACING.

SAILPLANE, see GLIDING.

SAXHORN, see BRASS INSTRUMENTS.

SAXOPHONE, see WOOD-WIND INSTRUMENTS.

SCHNEIDER CUP, see AIRCRAFT RACING.

SCRAP-BOOKS. For a century now, children —and, indeed, also adults—have spent pleasant hours compiling and poring over scrap-books. Like most collections, the scrap-books of beginners tend to be a mixture of everything that attracts the varied interests of the young. But those to whom scrap-book making is of more than fleeting interest, soon find that the scrap-book which records some particular hobby or experience of the compiler is the most rewarding. Thus by cuttings, photographs, reproductions of paintings, notes, and plans, fascinating scrap-books can be compiled on the most diverse subjects—engines, bridges, clocks, period costumes, or furniture; a foreign country, explorers and their achievements, a favourite sport, theatre, cinema, or books—the list of possible subjects is endless. Probably the most successful scrap-books are those inspired by a particular theme such as one of these; but general scrap-books, reflecting all that interests the collector, have also their appeal. Scrap-books also serve to give later generations an intimate picture of the period in which they were made.

SCULLING, see ROWING; BOAT-RACES.

SEASIDE RESORTS. It is difficult to imagine a time when the seaside holiday did not exist, and difficult for English people to realize what it is like to live in countries such as Austria or Czechoslovakia where the sea cannot be reached without foreign travel. Yet up to the middle of the 18th century seaside resorts were almost unknown. Though the springs at Scarborough on the Yorkshire coast had been discovered early in the century, the fashionable resorts were inland SPAS (q.v.) where people went to take the medicinal waters.

Dr. Richard Russell, a celebrated 18th-century physician, was responsible for introducing the seaside holiday. He not only wrote a book on the use of sea-water as a cure for glandular disease, but himself settled on the wind-swept coast of Brighton, then known as Brighthelmstone. His book and his example effected a social revolution. Brighton blossomed out with a coffee-house and an assembly room; George III made Weymouth popular; and Deal and Eastbourne were soon attracting visitors. Margate, because of its open position at the end of the Thames Estuary and its traffic links with the city, was an obvious resort for Londoners. By 1765 five 'hoys'—single-masted sloops—were carrying passengers down the river to Margate at a return fare of half-a-crown. In 1814 the first steam packet made the journey. Southend in 1780 had fifty houses, but 14 years later it
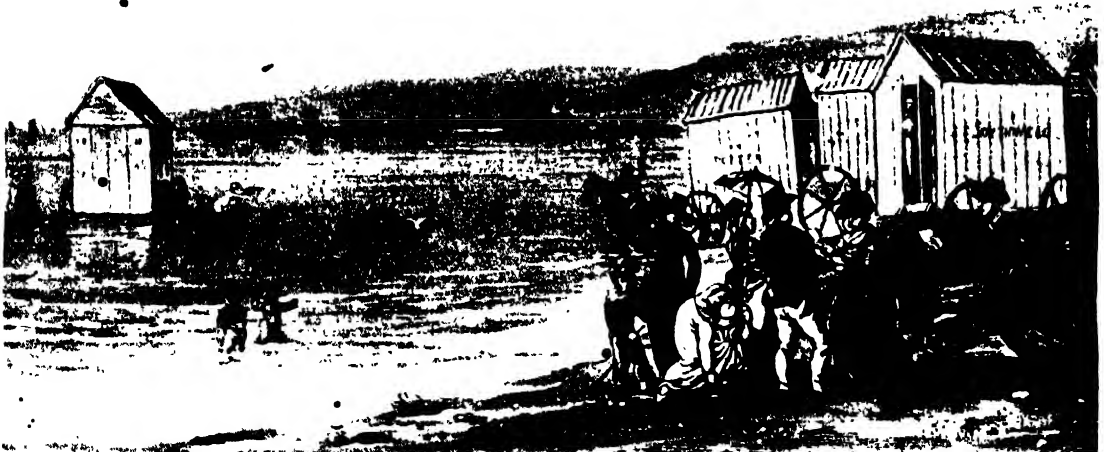
SEA-BATHING FROM BATHING-MACHINES IN THE EARLY 19TH CENTURY
Coloured aquatint by I. Gillen, 1813

boasted a 'romantic library', coffee rooms, and gambling establishments. By 1806 it had added a theatre, a Methodist Chapel, and ten bathing machines. So all round the shores of England, wherever there was a good stretch of sand, or a 'view', or a smell of seaweed, seaside resorts sprang up, with boarding-houses, parks and gardens, marine terraces, and promenades. It became a mark of fashion to spend part of the summer by the sea.

With the Industrial Revolution and the coming of the railway, the resorts ceased to be the prerogative of the upper classes. Many people took 'treatment' at the seaside with great solemnity. Not only did they bathe in the sea—they also drank it as though it were the elixir of life. The bathing machine, invented by Benjamin Beale, was a huge wagon drawn down to the sea by horses: at the door facing on to the sea was a canvas awning, under cover of which the bather dipped, safe from prying eyes.

As people could not spend their whole holiday in the water, the local authorities vied with each other to provide amusements and activities. Theatres, dance-halls, saloons, and shops were built; donkeys trotted on the sands; pierrots and nigger minstrels sang above the general hubbub. Later on came the pier. Two or three resorts would rival each other in building the longest pier, that of Southend being over a mile long, with a railway running along it. Then came amusement parks which included shooting galleries, switch-backs, and scenic railways, and, more recently, towers, zoological gardens, ball-rooms, and carnival lighting. A feature of many resorts is the concert party, which provides in the pier pavilion entertainment of the MUSIC HALL variety (q.v.). Most concert parties include singers, dancers, a small chorus, and comedians. Each resort has developed its own character and clientèle. The Londoner has made a 'home from home' at Southend, Margate, and Brighton; Scarborough draws the well-to-do of Yorkshire; Blackpool is the resort of the Lancashire people; Bournemouth attracts invalids and those who take their pleasure more sedately, or wish for a mild winter resort.

Other countries have also their seaside holiday resorts. The French Riviera is one of the most famous because of its lovely early spring climate and beautiful scenery and flowers. There is also the attraction of the CASINO (q.v.) at Monte Carlo. Many wealthy people go there to avoid the cold winter months in Britain. Other resorts are the Italian Riviera, the Dalmatian coast, St. Malo and Dinan in Brittany, and, Miami beach in Florida, a favourite resort of Americans.

Those who prefer a quieter holiday than that which the bigger seaside resorts provide can go to the fishing villages of the Yorkshire and the south-west coasts, where now there are often more boarding-houses than fishing-boats. Some choose the sandy coves between the rocky cliffs of Devon and Cornwall; others keen on SAILING (q.v.) go where there are river estuaries or sheltered harbours. There is no place in England more than 80 miles from the sea, and few people have not visited the sea by bicycle, car, train, or charabanc, for a day's outing or a summer holiday.

See also HOLIDAYS.

SHIPS, MODEL, *see* MODEL SHIPS.

SHINTY. This, the national game of the Scottish Highlands, called *Camanachd* in Gaelic, is one of the oldest British games. The Scottish Shinty, the Irish game HURLEY, and the Welsh Bandy are the ancestors of HOCKEY (qq.v.). The leather-covered cork and worsted ball is about $2\frac{1}{2}$ inches in diameter. The stick (or 'caman') is curved like a hockey stick, but the striking end is triangular in shape with a flat bottom. The field, from 140 to 200 yards long, and from 70 to 100 yards broad, has goals or 'hails' at each end, 12 feet wide and 10 feet high. The teams of twelve players oppose each other in pairs, as in LACROSSE (q.v.). The game is played somewhat like hockey, except in the following ways: the stick may be lifted to any height in play, and the ball may be hit with either side of it; there is no off-side rule, but no attack player may go inside the opponent's '10 yards area' (a 10-yard semicircle round the hail) unless the ball is already there; hails may be scored from either inside or outside this semicircle.

The name 'shinty' appears to come from the same derivation as 'shindy', and means a brawl —from which has come the expression 'to kick up a shindy'. In the days before formal rules were drawn up shinty matches used to be played between villages or clans, with a keg of whisky as a prize—nominally for the winners, but in practice usually shared at the end of the match by both teams. The Camanachd Association, the match for whose cup is the great event of the

A GAME OF SHINTY

At the start of the game the ball is thrown up between the crossed camans of the two centre players. *Oban Times Ltd.*

year, was founded in 1893 as the governing body of the game. The present rules date from 3 years later.

SHOOTING, *see* BIG-GAME HUNTING; GAME SHOOTING; PISTOL SHOOTING; RIFLE SHOOTING; SPORTING GUNS AND RIFLES.

SINGING. The voice is a musical instrument, but unlike all others in that we cannot see how it works. We do know, however, the way in which it is produced, thanks to recent inventions of scientific instruments such as the laryngoscope, and X-ray photography. When anyone speaks or sings, the sound which the listener hears is due to the vibration of two elastic-like strips (membranes) called 'vocal cords', which lie behind the 'Adam's Apple', and roughly at right angles to it, almost like a pair of extra 'lips'. But if that were all the machinery required to produce the voice, we should hear only a 'reedy squeak' when these vocal cords were vibrated by the breath. A good deal is heard nowadays about the amplifying of sound by means of loud-speakers and such instruments, and this is exactly what happens to the reedy squeak when it leaves the vocal cords. In other words the throat and mouth (as well as a space behind the nose) do the same sort of job for the voice that the horn of a wireless loud-speaker does for the GRAMOPHONE (q.v.).

All this 'machinery', however, would be quite useless unless there were breath or air to set the vocal cords in motion. Unfortunately, teachers of singing are by no means agreed as to what is meant by 'correct breathing'. For ordinary everyday breathing comparatively little air is needed, but for singing much more is required; and that is why special breathing exercises are often necessary, because the singer has not only to breathe in correctly, but also has to control the breath when holding a long note or group of notes, or when taking a very quick breath in a rapid passage without disturbing its flow. In spite of the various methods of breathing taught by professors of singing, it is safe to say that deep breathing is the generally agreed foundation of singing.

By nature women and children have 'thin' vocal cords, and men 'thick' ones; and so we speak of the 'thin register', which is the natural voice of a woman or child, and of the 'thick register', which is the natural voice of a man. Curiously enough, however, a man can so alter the shape of his vocal cords—from thick to thin—(by means of the muscles controlling them) that he can imitate the middle and lower notes of a woman's voice; and that is known as *falsetto* singing. In yodelling, a man, using the same sort of mechanism, makes his voice jump, as it were, from the normal to the *falsetto* and back again as often and as speedily as he wishes. Likewise women and children, can, if they wish, alter the shape of their vocal cords and imitate the voice of a man—at the lower end of their voices. This kind of voice has often been referred to mistakenly as the 'chest' voice or register, but whatever name we give to it, it is invariably unpleasant to the ear. A 'register' in the voice has been accurately defined as a series of tones produced by the same mechanism, whether thick or thin: the tones should therefore always be of the same quality throughout the series.

A boy's voice never actually breaks—if it did, he would obviously be dumb for the rest of his life—but at a certain period of his early life, it 'changes'. At this stage he will often find it difficult to maintain one kind of register while speaking or singing, for at that time the vocal cords grow very quickly, more quickly in fact than the muscles which control them; and so for the time being his voice will necessarily be wayward and out of proper control. This does not mean that it would be unwise for him to sing at this stage— far from it—but if he finds it beyond

him, he can always whistle—another interesting example of the mechanics of sound. Rounded lips and breath driven through them are all that is required to produce a whistle, but in order to change the pitch of a note, changes of shape 'inside' the mouth—not in the vocal cords—are necessary. A moment's experiment with whistling will show this to be the case. The fact that some people can actually hum one melody and whistle another at the same time shows that the mechanisms for singing and whistling are different. In the same way it can easily be seen by experiment that open sounds such as *oo, oh, aw, ah,* and so on are made chiefly by altering the shape of the mouth, and consonants by movements of the tongue, teeth, or lips.

Voices can be classified into four main types: soprano and contralto for women's voices, and tenor and bass for men's. Soprano voices are divided further into high soprano and mezzo-soprano (half-soprano). Bass voices are divided into deep bass and baritone.

The history of singing is far too long a story to recount here, but it is evident that from the early days of the Christian era Italy has been foremost among the singing nations of the world, partly because the language consists mostly of pure vowels and has always been considered a very singable one, partly because the Church, with its centre in Rome, encouraged singing in its services, and partly because both opera and oratorio had their first beginnings in that land. Italian 'marks of expression'—such as *piano* and *forte,* and tempo directions—such as *andante* and *adagio,* are still used by composers of all European nations.

In the 17th century, which might well be called the Golden Age of singing in Italy, there were two main styles of singing- 'Recitative' and 'Bel Canto', both associated with the introduction of OPERA (q.v.) in the year 1600. The former provided a means of imitating in music the rise and fall of ordinary descriptive speech, and was usually dramatic in effect; the latter was concerned mainly with beauty of tone, in imitation perhaps, of the 'gentle-sounding flute'. In those days a period of 10 years' study was by no means uncommon for the would-be operatic 'star'. Later the Bel Canto style gradually declined, mainly because, in the 19th century at any rate, the singer had to contend with an ever increasing 'battery' of orchestral instruments, and such composers as Verdi and Wagner made

ever-increasing demands on their singers. As Dr. Scholes puts it: 'In the 18th century the composer was the slave of the singer, but in the 19th the singer became the slave of the composer.'

See also CHOIRS; MUSICAL INSTRUMENTS.

SINGING GAMES. Most traditional singing games are hundreds of years old, and have been passed on by word of mouth, so that we can never know exactly when or where they originated. Many of them were once performed by grown-up people as serious dances. Singing Games are, in fact, a form of folk dancing, often having their origins in religious RITUAL (q.v. Vol. I); they are a reflection of the main aspects of adult life: war, hunting, love, and death, and an imitation of the rituals connected with these.

The simple nursery challenging games, such as I'm the King of the Castle and Cowardy, Cowardy Custard, are obvious imitations of war; and the TUG-OF-WAR (q.v.) is the climax of many of the most popular singing games. An old fighting game popular in the Midlands is We are the Romans, of which the original version seems to have been We are the Rovers. One side represents the 'Romans' or 'Rovers' (the invaders), and the other the 'English' or 'Guardian Soldiers'. The challenge 'Are you ready for a fight, &c.?' is sung to a martial tune, and replied to by the other side. The climax is a fight in which the Romans either try to capture the English or to take their territory. In some version, as in Nuts and May, the challenge is 'Who will you send out to fight?', and each child is sent out in turn for a tug-of-war with one of the opposing team. The name of this game is obviously an altered form of something more logical: 'Here we go gathering nuts away' is one suggestion, which connects the game with harvest dances, and 'knots of May' is another, which suggests a May Day celebration. Oranges and Lemons and its variants, such as Thread the Needle, and London Bridge is Falling Down, involve passing under an archway, followed by a pretended execution, and sometimes ending in a tug-of-war. A sinister origin seems to belong to London Bridge is Falling Down. Equivalents exist all over Europe, which are thought to hark back to the ancient custom of walling in a human sacrifice when a bridge or building was constructed. Oranges and Lemons is probably military in origin, for church bells ('The bells of St. Clement's') were used in the past to muster

the people of a town for battle; and the choice 'Oranges or Lemons?' suggests a choice between the colours of two contending parties.

STAGES IN A GAME OF ORANGES AND LEMONS
Drawing from Lady Gomme, *The Traditional Games of England, Scotland, and Ireland* (1894)

The chasing games are imitations of hunting, or of skirmishes of raids and captures, rather than of war. One of the oldest of these is Tom Tiddler, which has given us the phrase 'Tom Tiddler's Ground'. One player is Tom Tiddler and tries to catch the others as they run across his territory, which lies between two 'bases' where they are safe. They sing as they go:

> We're on Tom Tiddler's ground
> Picking up gold and silver.

Variations of this game are played in the same way as Prisoner's Base or Relieve-O (see STREET GAMES). Very similar to the original version is the nursery game of Wolf, Wolf (or Sheep, Sheep) Come Over, in which the pursuer is a wolf and the other players sheep.

Many singing games imitate the ritual of courtship, and some reflect primitive marriage customs. In most of these the fun depends upon the selection of a partner. A simple game of this type, played by young children, is Farmer's in his Den, in which the farmer chooses a wife, the wife a child, the child a dog, and so on, the chosen children collecting in the middle of the circle. Drop Handkerchief is typical of the more obviously courting games. The song to which it is sung goes:

> I sent a letter to my love
> And on the way I dropped it,
> And one of you has picked it up
> And put it in his pocket.

The players stand in a ring with joined hands, while a girl on the outside drops her handkerchief behind the boy she chooses, who then chases her in and out of the ring until he catches her. Nuts and May also involves the selection of a partner, and in some versions the tug-of-war is always between a boy and girl whom he has come to 'fetch away'. A very old game played like Nuts and May is My daughter Jane:

> We are three knights come out of Spain
> A-courting of your daughter Jane . . .
>
> My daughter Jane, she is too young,
> She can't abide your flattering tongue.
>
> If she be young, or she be old,
> She for her beauty must be sold.

All these games, it is thought, reflect the ancient tribal custom of marriage by capture.

A game of a different kind is Queen Anne. In the most usual version one player (a boy) faces a row of others (girls), and has to guess which of them is holding a ball behind her back—she is 'Queen Anne'. In another version a boy has to identify a girl from amongst three who are disguised to look alike. This game seems to be connected with an ancient marriage custom of disguising the bride. In many old stories about this the bride betrays herself by winking, smiling, or giving some other sign, such as holding an object in her hand.

A surprising number of singing games are direct imitations of funeral rites, and of these Jenny Jones is perhaps the most familiar. The name is a corruption of 'Jenny jo'—'jo' being an old Scottish word for sweetheart. In some parts she is called 'Jinny Jew', or even 'Genesis'. The players advance, singing:

> We've come to see Jenny Jones,
> Jenny Jones, Jenny Jones
> We've come to see Jenny Jones,
> And how is she to-day?

and are told in succession that she is washing, ironing, folding, and so on; then that she is weeping, dying, and finally, that she is dead. They then suggest various colours to wear for the funeral, until eventually black is approved. Booman, another old funeral game, consists simply in an imitation of burial rites. Old Roger involves three principal players, a corpse, an apple tree, and an old woman, as well as a company of mourners who sing the song. The climax comes when the 'corpse' comes to life and chases away the old woman who is stealing

the apples. Still popular to-day is Wallflowers, in which each child turns round to face the wall when her name is mentioned. One version runs:

Wallflowers, wallflowers, growing up so high,
We are all little children,
And we shall surely die
Excepting Mary Smith, the youngest of us all.
Fie, fie, for shame!
Turn your face to the wall again.

What exactly these words mean we do not know, but to turn the face to the wall has always been a sign of mourning, and the game is probably connected with death and funeral rituals.

Traces of old beliefs and superstitions are to be found in nearly all singing games. Ring a Ring a Roses, for instance, has a sneeze as its climax, and is thus connected with the old superstition that sneezing or laughing is dangerous, and lays one open to possession by evil spirits (hence the exclamation 'Bless you!' when someone sneezes). Other games are said to go back to pagan work and fertility dances, originating in an idea that the crops would grow as high as one could leap. An old game called Oats and Beans and Barley Grow, in which the child jumps into the air, obviously belongs to this group. It was originally a fertility rite, and in many countries, such as Bukovina and Roumania, is still solemnly danced by all the adults of the community. There are also rhyming and singing games which accompany the various rhythmic actions of ball-bouncing, skipping, or hand-clapping, or in which the rhyme is used for 'counting out'—that is choosing the leader of the game. In many the words are now quite unintelligible, as in the bouncing game

One, two, three a-lairy,

or the leap-frog game,

Ili Jimmy Nacko, one, two, three
Obobé, obobé, all-y-over!

But the rhythm is of course preserved—the words probably having sprung naturally from the actions.

See also PARTY GAMES; STREET GAMES; FOLK DANCING.
See also Vol. I, FOLKLORE; RITUAL; MARRIAGE CEREMONIES; DEATH CEREMONIES.

SINGLESTICK. This sport, now rarely seen, was once popular because it provided excellent practice for sabre-fencing. Indeed, in the late 19th century singlesticking was revived and improved largely for this reason. The two singlestick combatants stand within range of each other, aiming blows at each other with cudgels. The actual target is the head, though blows can be aimed at any part of the body above the belt. Such blows, however, are usually feints, designed to lower the opponent's guard. There is no foot-work as there is in. FENCING (q.v.), the combatants remaining in the same position all the time. The stick is wielded with strong flicks from the wrists. The winner is the man first to break his opponent's head—that is, to draw blood. In the revived 19th century singlestick play 'touches' could be scored with the point of the stick (as in sabre assaults), and hits on the leg were permitted.

The sport has an interesting history dating back 400 years, when a slim ash stick, nearly 3 feet long and thicker at one end than the other, was used. The contests were conducted under the rules of back-sword fencing, in which no thrusts were permitted. Not till the 17th century were the wooden weapons equipped with guards and, ultimately, wicker basket hilts to protect the hands. Singlestick contests were extremely popular in Georgian days, particularly in Somerset and Berkshire. There is a stirring description of singlestick in *Tom Brown's Schooldays*.

See also QUARTER-STAFF.

SKATING. This is a method of progression over ice by means of steel blades attached to the boots. Its origin is obscure, but it was probably evolved amongst the nomadic tribes of the north as a way of travelling quickly over frozen fjords and lakes (*see* SNOW AND ICE TRAVEL, Vol. IV). The primitive skate was undoubtedly made of bone: in various museums throughout Europe we find bones that have been shaped rather like the modern skate, and were apparently fastened to the feet with leather thongs. Later skates were made of iron, and then of steel, which cut into instead of gliding over the ice. Skating, therefore, like other pastimes such as yachting and hunting, began as a necessity and developed into a sport and an art.

Most people learn the first stages of skating merely by skating. All that is required is good balance, confidence, and practice. Children generally learn very easily—indeed, children are often extremely proficient at advanced figure-skating. When the skater can scamper about the ice, both forwards and backwards, with confidence, he is ready to learn figure-skating. For this he must master the four basic 'edges'—the

A SKATING RINK AT WENGEN, SWITZERLAND. *The Times*

outside, and inside edges, forwards and back-wards. To 'cut an edge' he must learn to skate on one or other side of the blade of his skate. He will find that by turning his head strongly to the right or the left, with both feet on the ice, he will automatically go round in a curve in the direc-tion in which he is looking. At this point he lifts one foot off the ice at a time. The turn of the head, and consequent curve of the body, imparts a certain amount of 'lean' to his body; so when he turns to the left and lifts the right foot, he will find himself making a curve on the left outside edge. If, when looking left, he lifts the left foot off the ice, a similar curve will be made on the right inside edge. This principle applies both forwards and backwards. When it has been mastered, complete circles can be made under perfect control, and the skater will spend some time practising the 'figure of eight' on both edges. The two fundamental rules are: first, that the 'strike' or push-off from the ice must always come from the flat of the blade and not from the toe; and second, that the 'lean' of the body must be direct from the head to the foot, without any bulging at the hip.

After control of the edges has been acquired, the skater has only one more step to learn before he can waltz—the 'three turn'. This is a turn in a natural direction from an outside forward edge to the inside backward on the same foot. In this turn, although the start is made on the outside forward edge and turned to the back

inside, the progression is in the same curve as would have been made had the outside edge continued unbroken by a turn. The three turn must be under complete control before any attempt is made to dance. The steps of the waltz are as follows: man's step—right forward outside edge; three turn, with the free foot (the left) placed alongside the right on the back outside edge; then the forward outside right; then comes a cross over, and a new start on the left forward outside. The sequence is then repeated. Where the man does forward edges, the woman does backward ones. Her step is more difficult, starting left back outside, forward right outside, three turn, and left back outside, then repeat.

In the big skating competitions the most com-plicated figures, which require years of study and practice, are seen. An example is the 'bracket, change edge, bracket', in which the skater makes drawings of brackets on the ice just as they would be drawn on paper, but skating them in what is called 'paragraph form' that is, he draws (or cuts) them accurately on the ice and repeats them three times (the 'triple repetition') each drawing as nearly as possible covering the first. Another complicated figure is the 'Axel Paulsen' jump, which is from an outside forward edge, with one and a half revolutions in the air, down to a 'sit spin'.

The British were among the first to develop skating as an art, and the first recognized style

was the so-called 'English style'. This is a rigid style, depending on the purity of the poise of the body over the skate, with the shoulders, arms, and the 'unemployed leg' (the one not on the ice) all kept under strict control, and not assisting the balance at all. All the turns are accomplished by the action of the shoulders in conjunction with, or against, the hips. Englishmen were responsible for the invention of certain difficult turns, such as, for instance, the 'brackets' turn, which are used only in advanced figure skating and major competitions. The English style (though still practised both on ice and roller skates) is not now in general use, and not at all in international competitions.

The 'International Style', now in universal use, and the only style accepted in National, European, World, or Olympic championships, was brought to Europe from the U.S.A. in 1864–5 by an American, Jackson Haines, who was originally a dancing-master. It is a natural, uninhibited style, allowing the skater greater freedom of movement than does the English style. For competition purposes it is divided into two sections: 'compulsory or school figures', of which there are sixty-nine, graded and marked according to difficulty; and 'free skating', which may be defined as a harmonious combination of 'edges', turns, pirouettes, jumps, and speed-making or dance steps, the whole skated as a programme in a show. The skater performs to music and has the whole rink at his disposal. Free skating is seen in figure-skating competitions, at skating galas, and at exhibitions, and is by far the most attractive kind of skating to watch. In competitions it is marked in two categories: (a) 'contents of programme', including such points as difficulty, variety, harmonious composition, and utilization of space; and (b) 'manner of performance'—that is, sureness, easy movement to the rhythm of the music, beauty of movement, and so on. In competitions the marking is so arranged that school or compulsory figures are more important than free skating.

Figure-skating for the whole world is controlled by the International Skating Union, founded in 1892, which also controls racing. For championships the distances approved are:— 500 metres, 1,000 metres, and 1,500 metres (short distances), and 3,000 metres, 5,000 metres, and 10,000 metres (long distances). Marks are awarded according to the placing of the competitors in each of the four distances drawn, two

short and two long. It will be seen, therefore, that in order to win, a skater must be excellent at sprinting, as well as at middle, and long distances. This is one of the most exacting of athletic tests. Skating is a very fast method of progression. The record skating speed for a 5,000 metres race (just over 3 miles) is 8 min. 29·4 sec., whereas the world record for running that distance is 13 min. 58·2 sec.

There are three principal kinds of ice skates: those for figure-skating, for hockey, and for racing. Skates for English style figure skating are low and slightly curved, with a blade width of about $\frac{1}{4}$ inch; those for the International style are higher and more curved, with a blade width of about $\frac{1}{8}$ inch. Hockey skates have very narrow blades, and are flat, except at the toe and heel. Racing skates are longer, protruding by a couple of inches at the toe and heel. They are quite flat with a blade width of $\frac{1}{12}$ inch, and are built to combine lightness, strength, and rigidity to the greatest possible degree.

Of recent years 'ice shows' have been made popular in the U.S.A. and Canada, chiefly through the efforts and ability of Miss Sonja Henie, six times European, ten times world, and three times Olympic champion. These shows consist of large troupes of show girls and men, skating in formation, together with individual or group performances by acrobats, comedians, stilt-skaters, or barrel-jumpers, who perform their turns on skates in the same way as MUSIC HALL artists (q.v.). These, with smaller shows in theatres and cabarets, are rapidly becoming popular in Britain, and, in fact, all over the world.

See also ICE HOCKEY.

SKI-ING. From remote antiquity men have used some kind of contrivance to prevent themselves sinking too deeply into soft snow; but there is a radical distinction between skis and snow shoes. On snow shoes, which are like large rackets fitted to the feet, one can only walk; whereas on skis—long narrow boards turned up at the toe—one can slide downhill at great speed, and even on the level a fair pace can be maintained by a combination of lunging forward and 'punting' with the sticks which every skier carries. The oldest ski known, which was found preserved in a Swedish peat bog, dates back to about 3000 B.C.; but ski-ing as a competitive sport is a comparatively recent development.
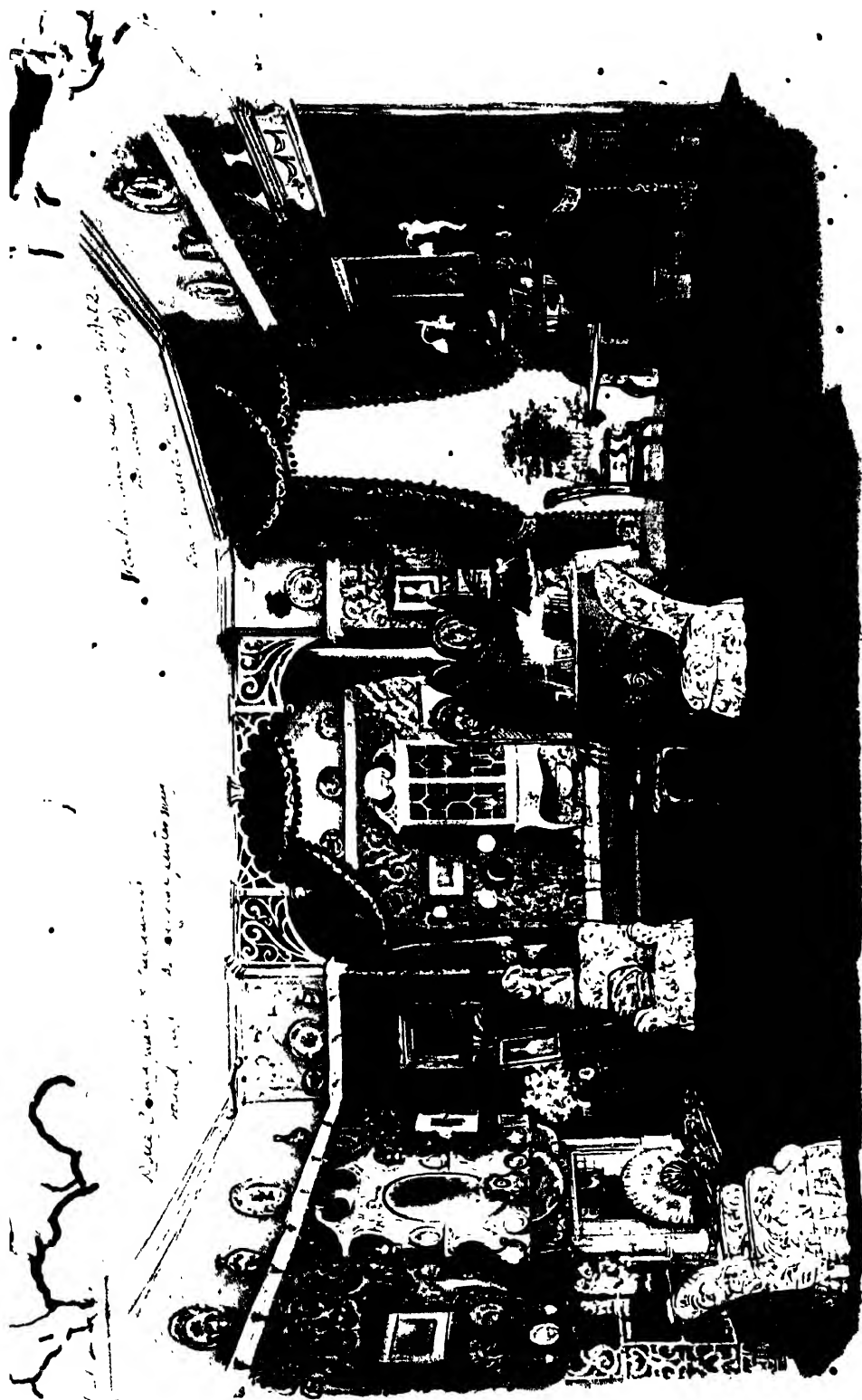
A BON-SET DESIGN BY REX WHISTLER FOR OSCAR WILDE'S *An Ideal Husband*

SKIERS COMING DOWN A SLOPE AT GRISONS IN SWITZERLAND
They are making continuous S-turns. *Meerkamper, Davos-Platz*

Isolated ski races took place as early as 1797, but the first competition with a continuous record, the Holmenkollen Meet which takes place near Oslo, dates only from 1892. The Holmenkollen Meet is decided on the combined result of a long distance race (about 10 miles) and a jumping competition.

Ski-jumping takes place on specially prepared jumping hills, many of which have cost thousands of pounds to adapt to the requirements of the sport. The jumping track is divided into three portions, the approach, the platform, and the alighting ground. The jumper runs down the approach, the gradient of which is less steep than that of the alighting ground, crouches low before he reaches the platform, and straightens up suddenly as he reaches the edge of the platform. This movement, the so-called *Satz*, is designed to launch him into space with the maximum velocity. He lands far below on the steepest part of the hill, the gradient of which is usually from 30 to 35 degrees. Jumps are measured by their length from the edge of the platform to the point where the skier alights. The record jump was made in 1948 by a Swiss called Fritz Tschannen on the Planica hill in Jugoslavia. The length was 120 metres (390 feet), and the jumper on that occasion probably dropped 150 vertical feet through space before striking the ground. Such a fall would of course mean instant death but for two facts: in the first place, the jumper lands on a very steep slope which breaks the shock, strikes the slope a glancing blow, and continues to travel downhill at a speed which gradually diminishes as the gradient relaxes; and secondly, these long jumps are possible only if the jumper himself is almost horizontal, the long flat ski and the quasi-horizontal position of the body with the outstretched arms produce a parachute effect which greatly reduces the speed at which the jumper falls through space. It is calculated that on these long jumps the alighting speed is little more than 60 m.p.h. Even so, jumps of over 100 metres are perhaps one of the most exacting tests of courage, natural balance, and superb skill in the whole world of sport.

Though skis have been used for thousands of years in Scandinavia, it was only in the early 80's of the last century that they were first used in the Alps. To begin with, the Alpine people copied Scandinavian forms of competition, long-distance races and jumping competitions. It was the British who insisted that just as long-distance races developed naturally out of the gentle undulating terrain of Norway and Sweden, so the most logical form of Alpine race in Alpine countries should be a short downhill race. A long-distance race is a test of endurance, but no adequate test of downhill ski-ing. The 'slalom race', a name first applied in Norway to a style competition, was also introduced by the British. The modern slalom, an invention of Arnold Lunn's, is a race down a course defined by pairs of flags through which competitors must pass. The flags are arranged so as to test every variety of turn, short and abrupt, long and sweeping. In 1936 the slalom race was first included in the programme of the winter Olympic Games; and in 1938 international recognition

was obtained from the International Congress for downhill and slalom races.

A good average speed for a long-distance race is 7 to 8 miles an hour; but speeds of 80 miles an hour have been reached on the 'flying kilometer' at St. Moritz, and downhill races have been won at an average speed of just under 50 miles an hour. British skiers, in spite of the fact that they have to travel 500 miles to find a training ground for racing, and in spite of the fact that few British can afford the time to become first-class performers, have none the less put up an amazingly good performance in international events. Racing against the best professionals of snow-rich countries, British amateurs have finished consistently well, and have sometimes won international events. British women twice won world championships, and British University skiers have often won the University Championships. In the last one before the Second World War the British Universities Ski Club defeated the Swiss and the Italian Ski Clubs, and secured a notable victory in Norway over a picked Norwegian team. But competitive ski-ing is not necessarily the most important branch of ski-ing. In the early days of the sport the pioneers were chiefly interested in skis because they opened up the winter Alps. The greatest pioneer of ski-mountaineering is undoubtedly that great Swiss mountaineer Marcel Kurz. The first important ski expedition in the high Alps was the crossing of the Oberland by a German party in 1897. Arnold Lunn ten years later

SKIERS PERFORMING 'TELEMARK' TURNS, WHICH ARE USED IN SOFT DEEP SNOW. *Swiss Federal Railways*

traversed the Bernese Oberland from end to end in January, climbing the Finsteraarhorn in the course of this expedition. In those days a man was regarded as a good skier if he could lead a party in safety in the mountains; if he knew enough about AVALANCHES (q.v. Vol. III) to avoid being killed in them; if he was a master of snowcraft; and if he combined speed and steadiness, and could pick a good line while descending unknown ground. It requires skill and knowledge to anticipate, while ski-ing at a fair speed, the influence of sun and wind and aspect on the texture of the snow. A skier who is taken off his guard and who runs suddenly from fast into slow snow is liable to pitch on his head, and on his back if he changes from slow to fast snow. Ski racing, on the other hand, takes place on a prepared track of hard beaten snow, which makes the minimum demand on snowcraft. It is a magnificent sport, but those who are too old to race should not yield to the insidious temptations of 'funicular' ski-ing, for the mountains have something infinitely better to offer than sliding down standard courses, the summit of which can be reached by funicular railway or ski hoist. Ski-mountaineering does, and ski-racing does not belong to that select group of great sports which force their devotees to study nature in one of her many moods. It is difficult to become a first-class racer or jumper; but any active young person can learn enough ski-ing in three or four days to enjoy a cross-country tour, and good and cheap tuition is obtainable at all Alpine centres.

The ideal ski track is a straight line, but where a straight run is impossible, the skier has to turn. A good skier can stop within 2 or 3 yards from a direct descent at 40 miles an hour, or descend by means of continuous S turns. Of the most popular turns, the 'christiania' and the 'telemark' take their names respectively from the capital of Norway, now called Oslo, and from the Telemark district of Norway, from which the earliest competitive ski-ing came.

The best ski-ing month in the Alps is undoubtedly March, but there is excellent ski-ing at the highest centres until the middle of May, and glacier ski-ing is at its best in June. There is indeed no month in the year in which admirable ski-ing cannot be obtained. There is no more wonderful experience in the mountains than to begin the day with a perfect run on the snow-covered GLACIERS (q.v. Vol. III) in May or June, and to come down in the evening through
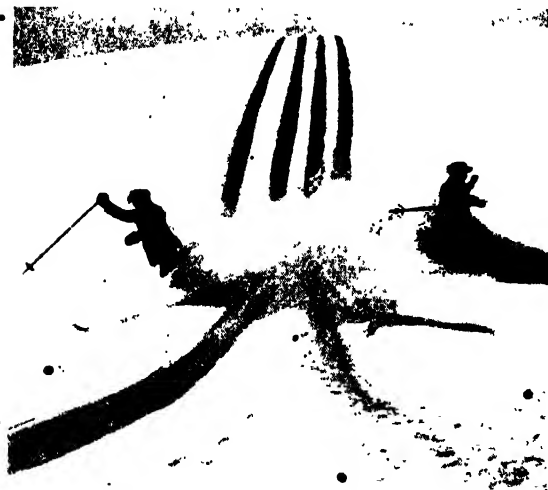
PLAYING SKITTLES IN AN INN-YARD
From a woodcut of 1802

meadows rich in gentians. The Ski Club of Great Britain, founded in 1905 by E. C. Richardson 'the father of British ski-ing', is one of the oldest ski clubs in the world. The Alpine Ski Club, founded in 1908, is a small club which specializes in ski-mountaineering. Perhaps the most famous Ski Club in the world is the Kandahar Ski Club, which is affiliated to the Ski Club of Great Britain. It was founded on 30th January, 1924, and takes its name from the Challenge Cup presented by Lord Roberts of Kandahar, which is now the senior Challenge Cup for downhill racing in the world. It was this club which developed slalom racing and founded the Arlberg Kandahar race, which had the status of a world championship in the past before downhill-racing was internationally and officially recognized. British skiers may well be proud of the fact that a British club has had a greater influence on the development of competitive ski-ing than any club in snow-rich countries.

- See also MOUNTAINEERING.
: See also Vol. IV: SNOW AND ICE TRAVEL.

SKITTLES (INDOOR BOWLS). The ancient game of skittles or ninepins is played in inns and public houses in many parts of the world. The skittle alley (there are only about a dozen of them left in England) is a covered shed, with a stretch of level planking about 12 yards long and 3 or 4 yards wide. The wooden pins weigh from 7 to 9 lb. each, and are symmetrically arranged in a 4 ft. 6 in. square, the 'king pin' in the centre. The wooden ball or 'cheese' has flattened sides and weighs about 10 lb. There are two players, or two sides of any convenient number. The cheese is thrown, not rolled, from varying distances—often 7 or 8 yards, the player being allowed one step forward as he throws. A good throw can bring down all nine skittles. There are various systems of scoring, one common method being to aim at an exact score of 31, counting one point for each pin knocked down.

Skittles has been a popular game in Germany and Holland for centuries. The German name for it was *Kegel*. It came to England from Germany, and was known in the 13th century under the name of *kails* or *keels* (or in Scotland *kyles*). It was frowned on by the authorities because it was the cause of gambling and rowdy behaviour, and it was forbidden under Edward IV. There was another official attempt to suppress the

game during George II's reign. There are many local forms of skittles on the Continent. Sometimes fifteen or seventeen pins are used; sometimes the pins vary in shape, are arranged in different patterns, and are given different values; sometimes large round balls with finger holes are used, as in American bowls. In Holland a round ball is rolled in a groove, and the king pin must be knocked down first.

Skittles were introduced into the United States by the Dutch, and rapidly became popular under the name of 'indoor bowls'. There, too, strict laws were passed against it, because of its association with low taverns and gambling. The Americans evaded the laws by adding another pin to the original nine, and continuing to play the game under the name of tenpins. American bowling alleys are elaborate constructions of highly polished hardwood, and often several are built side by side. The pins are spaced 12 inches apart and arranged in a triangle with one point towards the player. There are different systems of scoring, and variations of the game itself—such as 'candlepins' and 'duckpins'. Bowling championships are controlled by the American Bowling Congress. At a recent championship meeting there were just on 24,700 competitors representing every state in the U.S.A.

* See also 'PUB' GAMES.

SNOOKER, *see* BILLIARDS.

SOCCER, *see* ASSOCIATION FOOTBALL.

SPA. A 'spa' is a place which has grown into an important resort because of the medicinal properties of its waters. Spas generally have hot springs containing minerals such as chalybeate, iron, and radium; and their water can be used either to bathe in or to drink. Many such towns, at first the resort of invalids, became important as fashionable holiday centres. Spa, a town in Belgium near Liège, was the first of Europe's fashionable watering-places. The value of its chalybeate and alkaline springs was discovered as early as 1326, and from the 16th to the 18th centuries it was the most fashionable resort in Europe, visited by all the leading members of society. Although it did not keep up this position, it gave its name to all such watering-places, of which there were very many flourishing ones in the 18th and early 19th centuries.

Many of these, though re-discovered when spas became the fashion, had been known for

THE BATHS AT LEUKERBAD IN SWITZERLAND
A drawing by E. Whymper in *Swiss Pictures*, 1866. The bathers have refreshments in the bath. The two on the right are playing chess

their medicinal waters to the Romans. Remains of ROMAN BATHS (q.v.) have been found at Bath, for instance, and at Baden-Baden in Germany. Baden-Baden, Aix-les-Bains in France, and Aix-la-Chapelle in Germany, were the most popular European spas during the 18th century. Social life in these towns was centred round the baths and pump-rooms, where parades and social gatherings were held during the daytime; but the towns were also well equipped with promenades and public gardens, and concerts and balls were held every evening.

England had many flourishing spas, such as Bath, Harrogate, Cheltenham, Tunbridge Wells, and Leamington. Bath was the first of these, and set the fashion for the others—throughout the 18th century it was the centre of a most flourishing and glittering social life in the early summer season. Its reputation for gaiety was partly due to the influence of BEAU NASH (q.v. Vol. V) who, during the early years of the 18th century, was master of the ceremonies there, leading and organizing all the social gatherings. Although an inveterate gambler himself, Beau Nash was careful to ensure that moral behaviour was strictly observed by the society that came to Bath. Long after his death the town remained one of the most popular resorts for the upper and middle classes. People would visit the baths first thing in the morning and breakfast at the famous Assembly Rooms; drinking the waters after breakfast in the Pump Room was one of the social events of the day. The evening was spent at balls, theatres, and gaming-houses, gambling

being one of the principal entertainments at most spas. Bath features a great deal in the works of such 18th-century writers as Jane Austen.

In the late 18th and early 19th century it was the custom to visit the inland spas during the early part of the summer, going on to the seaside for the rest of the season. In the 19th century the SEASIDE RESORTS (q.v.) began to replace the spas as summer holiday resorts; but these watering-places are still visited by people who want to take the waters.

SPANIEL, see DOGS, BREEDS OF, Section 3.

SPEEDWAY RACING, see DIRT TRACK RACING.

SPINET, see KEYBOARD INSTRUMENTS.

SPORTING 'GUNS AND RIFLES. 1. WEAPONS. The standard of perfection to which British sporting weapons have been brought may be ascribed almost entirely to the inventive genius and the patience and perseverance of successive generations of gunmakers, who for 200 years or more have devoted themselves to the evolution of the modern shot-gun. Before that, most firearms used in Britain were Continental products. The 'lock', or the mechanism for exploding the charge of gunpowder (see EXPLOSIVES, Vol. VIII), evolved gradually from the primitive muzzle-loaded match-lock of the 15th century, in which the powder was ignited by a match, to the modern breach-loaded trigger mechanism, which fires a percussion cap in a cartridge. This cap ignites the propellant, now no longer gunpowder.

The match-lock was the forerunner of the wheel-lock, which came from Nuremberg in 1515, and was worked by a steel wheel which rubbed against a flint to make a spark. The wheel-lock was succeeded by the flint-lock, introduced in Spain in 1630, in which the powder was ignited by a spark from a flint. This remained in use until some time after game shooting first caught the public fancy—roughly about the era of George I, who, we are told, distinguished himself 'by shooting a partridge and a pheasant in Windsor Forest in 1717'. Shooting birds on the wing is, in fact, scarcely recorded before the middle of the 18th century, and it was not until the beginning of the 19th century that progress in either game preservation or gun manufacture started in earnest (see GAME SHOOTING). About this time two important inventions

contributed much to the sportsman's greater efficiency. In 1807 Alexander Forsyth invented the percussion cap, a small copper cap containing the powder and exploded by a blow from a hammer. In the 1820's the famous gunmaker Joe Manton introduced the double-barrelled flint-lock.

But still men demanded weapons which would allow quicker shooting. In 1854, therefore, the first breech-loading guns (that is, guns loaded through an opening in the back part of the barrel) began to replace the old muzzle-loaders; and the cartridge, containing the shot, powder, and percussion cap, was first used. This was followed just 21 years later by 'hammerless' weapons, in which the striking mechanism is entirely enclosed, and controlled by a spring which is released when the trigger is pressed. Again, in 1885 there followed the modern ejectors, which automatically eject the used cartridge. These were first patented by Anson and Deely, no fewer than eight patents being granted between 1886 and 1898 before the perfected product came on the market. As far back as 1869 the single-trigger action (one trigger for firing both barrels) was patented, but it was not until 30 years later that Boss, Greener, and Westley Richards adapted the mechanism to practical use. There have been other products of the gunmaker's art, such as the Winchester repeater; but these have never become popular.

The rifle is a more powerful gun, the heavier types being used for DEER STALKING and BIG-
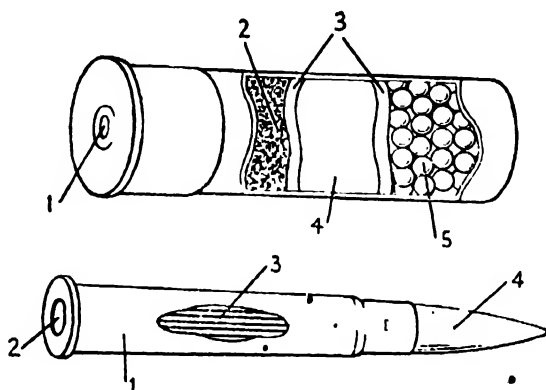

FIG. 1. TOP. SHOT GUN CARTRIDGE
(1) Percussion cap; (2) Propellant; (3) Cardboard disks;
(4) Felt wad; (5) Lead shot

BOTTOM. RIFLE CARTRIDGE
(1) Brass case; (2) Percussion cap; (3) Propellant;
(4) Bullet

GAME HUNTING (qq.v.). It shoots a bullet instead of shot. A bullet is a single projectile made of metal, such as lead or cupro-nickel, whereas a shot-gun shoots many round shot made of lead (*see* Fig. 1). The barrel of a rifle is 'rifled' or grooved in spirals, producing a rotary motion of the bullet, which greatly increases its steadiness and, consequently, its carrying power. The rifle is fitted with 'sights' at the fore and rear to assist in accurate aiming.

The only rifle with which the small-game shooter need concern himself is the 0·22 (the inside measurement of the diameter of the barrel measured in inches), for unless he stalks deer with a heavier calibre weapon, his only practice is at rooks and rabbits. The 0·22 calibre is a handy little rifle weighing only 5¼ lb.; which has been much improved in recent years, especially by the innovation of the bolt assembly which allows of quick extraction and ejection of fired cartridges, a crisp trigger pull, and a straight-line feed of cartridges. The precision-rifled barrel ensures deadly accuracy, and the adjustable rear-sight and bead fore-sight assist speedy aiming. It is, moreover, easy to keep in order, for the working parts lend themselves to quick dismantling and re-assembly.

2. LOADING, AIMING, AND FIRING. Guns should be loaded and safety catches set forward only when a line of shooters is ready to move off, or (in driving) when the beaters have started operations. When the beat is walked out and the drive over, guns should be empty, and between beats or when moving from one stand to another the only place for the sportsman's cartridges is in his pocket.

Theoretically, with a properly fitting gun, good cartridges, and correct shot sizes, at least eight out of every ten birds fired at should find their way into the game bag. In fact they do not: but nearly every miss is the shooter's fault, not that of his gun. It does not matter how fast a bird may be travelling, the shot travels many times faster and will reach its mark if, at the instant the shot is discharged, the muzzle is covering the proper point, which is usually a rapidly estimated point ahead of the bird itself. To attain an approximate correctness in this lightning estimation, when birds of varying flights at different distances present themselves, is the really difficult problem for the inexperienced shooter. Any novice may easily hit a small fixed mark at short range, but once that mark is in motion, rapid brain-work comes into play. Thus, when we speak of 'aiming' with a shot-gun, it is not the kind of aim associated with RIFLE SHOOTING (q.v.). The quick shot, incidentally the best shot, trusts to the co-operation of eye and hand responding to the telegraphy of the brain; his two eyes are fixed on the object, yet there is the briefest of pauses and the swiftest of verifying glances before the trigger is pulled. This lightning change of eye focus is just sufficient to allow the barrels to come into the field of vision. During that brief glimpse the alinement of the gun is proved without the eyes being diverted from the object. And the swing of the gun on to and past the bird in flight is never checked; the whole body swings in conformity with the directing hand upon the gun. With a rifle, of course, the aim is deliberate. Here it is a question purely of steadiness of hand and eye, even to a suppression of breathing, until the aim is verified and the trigger pressed.

3. CARE AND HANDLING OF GUNS. While fit, weight, and balance are of relatively minor consideration in rifle shooting at fixed targets, they are all essential to successful marksmanship on moving objects. The choice of a gun, therefore, which fulfils these conditions, is extremely important. Although, of course, individuals differ, broadly speaking a 0·410 bore is a good little shot-gun for any small boy. Later he may pass on to a 28- or 20-bore, and eventually to a 16- or 12-bore (*see* Fig. 2). So many young shooters have been handicapped by ill-fitting guns that the slight expense involved in being fitted at a shooting school is usually well worth while. There a beginner's master (or stronger) eye will be tested, his physique appraised, and his fundamental errors in stance, footwork, and handling corrected by experts, who will finally send him forth equipped as perfectly as possible.

With all firearms safety precautions are of first importance. Before ever a cartridge is entrusted to a novice he should be required to handle his gun at all times as though it were loaded. He should learn that there are only two ways of carrying it; either in the crook of the arm with barrels pointing to the ground, or over the shoulder at an angle of not less than 45 degrees. When walking up game, he may carry it at the 'ready', that is diagonally with the body, the butt being under the right armpit with the barrels pointing to the ground. He should learn never to level it at anyone, even in jest. When
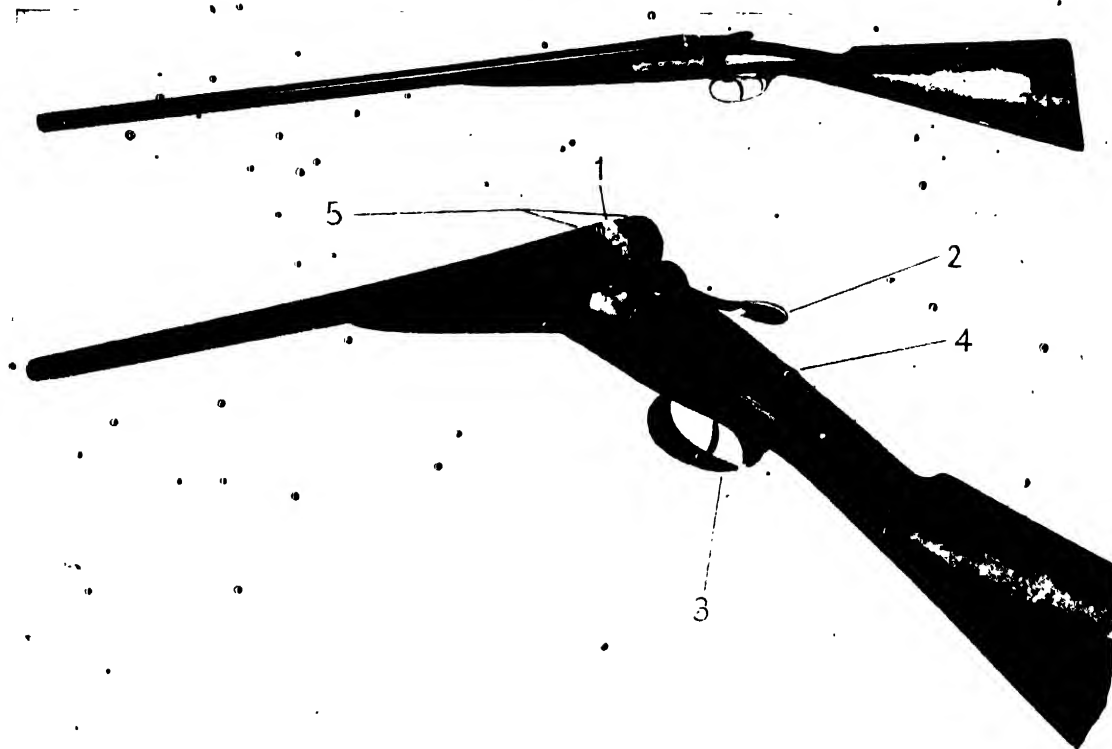
FIG. 2. A 12-BORE SHOT GUN

The lower gun is 'broken', that is, with its breach open, and shows: (1) Ejector; (2) Top lever for opening breach; (3) Triggers inside trigger-guard; (4) Safety-catch; (5) Barrels

climbing a bank or slippery slope or when jumping a ditch, he must empty his gun, as he must when he hands it to anyone, puts it down, or returns it to the gun room. The importance of these simple rules cannot be over-emphasized.

Guns and rifles are expensive implements and should be treated with respect. The requisite 'tools' for gun cleaning are two cleaning rods, a wire brush, gauge, cloths, and a supply of tow, Rangoon oil, and petroleum jelly. A gun must never be left with oil clogging any part of the mechanism; on the other hand it must not be put away bone dry after cleaning. Every portion of the action and exterior from the heel of the stock to the ribs of the barrel should be wiped with an oily rag, so that the gun is just moist to the touch before being put into its case or cabinet During cleaning, the bare fingers should never touch the barrel or mechanism, which should be held in a cloth. A toothbrush, or a feather dipped in oil, will reach all those intricate parts of the mechanism which are too remote for the fingers to tackle. The barrels should be cleaned first by pulling through a dry rag in order to remove fouling, and then by using oily tow on the cleaning rod, and finally by leaving them very slightly oily. A wire brush should be used only to remove heavy leading. Guns should then be put away in a dry place, and preferably kept in a case or a baize-lined cabinet when not in use. With care they will serve a lifetime.

For all practical purposes the care of rifles follows on the lines already indicated, but with this difference: in a 0·22 rifle the barrel should not be cleaned except very occasionally, because the powder in the cartridge gives off gases which do not form rust; in the larger rifles, however, the barrel must be cleaned and left oily, as with shot guns; but before the first shot is fired, it must be cleaned with a dry rag to remove the oil

See also RIFLE, SHOOTING; PISTOL SHOOTING.
See also Vol. X: WEAPONS, HAND.

SPORTS, *see* ATHLETICS; COMIC SPORTS; TRADI-TIONAL SPORTS AND CUSTOMS.

SPORTS COMMENTARIES, *see* BROADCAST-ING COMMENTARIES.

SQUASH RACKETS.

SQUASH RACKETS. The game is played on the same principle as RACKETS (q.v.), but in a smaller court, with a racket shorter in the handle, and a hollow ball made of indiarubber. The floor of the court is usually made of wood, preferably of maple, though wooden blocks or concrete can also be used. The game may be played between two players ('singles') or between four ('doubles'): in doubles a larger court is used (*see* diagram). Across the front wall of the court there is a line (19 inches from the floor in a singles court and 17 inches in a doubles), above which the ball must be hit when in play. A board, usually of 3-ply wood or metal, is placed along the floor to the play line, so that a low-shot ball at the play line can easily be detected by the noise it makes as it strikes the board. The service line, above which the ball must be served, is marked on the front wall, 6 feet from the floor in singles and 8 ft. 2 in. in doubles.

The object of the game, as in rackets, is to score points by striking the ball, either on the volley or after it has bounced once, in such a way that the opponent cannot return it, or at least cannot make a 'good' shot in return. The service must be completed diagonally across the court. Under English rules, only the player who has served ('hand-in') can score a point, as in badminton or rackets; but in America a point is scored for each rally, either by the server or the receiver. In England a game consists of 9 points, and in America 15 points; and in both cases a match is the best of five games.

The shots most used are the 'length', the 'lob', the 'drop', and the 'angle'. For a length shot, the ball is hit the length of the court so that it falls on the ground, or 'dies' near the back wall; the lob is played to draw the opponent to the back of the court; the drop shot is made by playing the ball on to the front wall just above the board with sufficient underspin to slow it up and make it drop almost dead; for an angle shot the ball is played off more than one wall. A combination of all these shots should be used to out-manœuvre one's opponent. The central position from which the whole court can be covered is the ideal one.

The first standard squash court in England was built in 1911; and since that time the game has spread over most countries of the world. In England there are many championship competitions, such as the Amateur Championship (first played in 1922), the North, South, East, and West of England championships, the Navy, Army, and Royal Air Force championships, county championships, and two competitions for London Clubs—the Bath Club Cup and Cumberland Cup. Over 200 English Schools now have squash courts, and competitions for school boys are the Junior Amateur championships (the Drysdale Cup) started in 1926, and the Public Schools Senior and Junior Handicap competitions held at Queen's Club. Oxford and Cambridge have played university matches since 1926. Women also hold amateur championships, county championships, and inter-club competitions in London. International matches are played between England, Scotland, and Ireland, and also between Britain and the U.S.A. Squash championships are also held in Australia, New Zealand, Denmark, France, Egypt, India, Ireland, and S. Africa.

STAGE DESIGN. Most stage plays can be helped enormously by set designs that bring a sense of reality to various scenes, and suggest the type of place, indoors or out-of-doors, that the author wishes the audience to picture in their minds. Therefore, the producer of the play employs a stage designer, whose task is to create scenery that will provide backgrounds to the action of the play. The stage designer does not paint the actual scenery, but prepares the plans and pictures from which the scenic artist will work. Before he begins, however, the stage designer must consult with the producer concerning the general type of scenery to be used in the new play; for there are three main treatments that may be used.

First, there is the 'permanent set' which remains the same throughout the play. A neutral

THE DUEL SCENE FROM 'HAMLET'
The permanent set is varied with furnishings for different scenes   *Bertram Park*

background, possibly of heavy curtains, may be used. The drapes may vary in colour from scene to scene, or the same set may be used throughout, changes of scene being conveyed by lighting effects and the use of rostrums and portable 'props'—that is to say, furnishings of all kinds. The producer tries to give the correct impression of the scene by building up the atmosphere, rather than by employing elaborate sets that leave nothing to the imagination. A permanent set is frequently used when a play calls for many changes of scene. Many producers of Shakespeare's plays favour this approach; for to have complete changes of scenery and furnishing would be both expensive and difficult. Secondly, there is the 'semi-permanent set', in which the contrasts of furnishings are stronger, but the main structural features of the stage, such as the pillars, archways, and doors, remain the same, and so there is no heavy amount of work when a scene has to be changed. Backcloths may vary as required, and there may be a greater use of 'props'. The third type of set, the 'box' set, requires far more work. A box set is the successor to the old-fashioned painted back-cloth and 'flies'—a series of flat pieces of scenery standing on either side of the stage to hide the fact that

there are no walls. The box set, as it suggests, is a complete room in itself, with three sides and a ceiling, and is therefore the most realistic of all types of scene (*see* Colour Plate opp. p 432). This type of set is used in plays in which there is only one setting for each act. It can, therefore, be constructed very solidly with 'practical' doors, staircases, and windows. In fact, any interior scene can be built so that it almost resembles an actual room. Any theatre that has a revolving stage can have several such box sets, and when a change of scene is needed, the stage is revolved so that the appropriate set faces the auditorium.

When the stage designer begins work on a new production, he must think not only of scenery and props, but also of lighting; for it is vital that the set be seen to the best advantage. Therefore, he must have a very thorough knowledge of the methods used to light a stage and the best ways of applying these. For very many years stage lighting was provided by long rows of lights suspended from the ceiling and running parallel with the footlights, and these were supported by spot lights placed in the wings of the stage. To-day, these 'battens', which carried blue, white, and red lights, have largely been replaced by 'spot' lighting. A spot light is a

miniature searchlight, operated from various parts of the auditorium. It may be situated on the front of the stage boxes, and there is usually a battery of 'spots' fixed on the front of the dress circle. The result is to bring the players into clear view of the audience; for when the remainder of the stage is not so strongly lighted, their beams appear to take on an added power. In addition, there are the footlights, or 'floats', so called because in the days when candles were used, these floated in saucers of water in a long row at the front edge of the stage. One of the chief values of the 'floats' is to provide a warm glow of light which helps to show up the faces of the players to the best advantage.

The stage designer almost always works in close association with the producer, and he must study the play carefully, including the author's description of the scenes both as to construction and furnishing. But it sometimes happens that the stage designer feels that a much better effect could be gained if some alteration was made; he may think, for instance, that a fireplace, window, or door will give a clumsy or unreal effect if built in at the places indicated by the author. When these matters have been settled, the stage designer makes a picture sketch of each scene, working in wash, which enables him to show depths of light and shade to an extent which he could not do in pencil or paints. He discusses these sketches in detail with the producer, and when they have finally settled on the appearance of the scene, the type and position of the furniture, pictures, curtains, carpets, and other items, he prepares an accurate plan of the stage as it will appear when the scene is set. He prepares an elevation in broadly the same way as an architect prepares his plans for a new building. After that, a small scale model of the set will be made, painted in the colours to be used on the real set. Miniature furniture may be added. When the stage designer has completed the architectural and modelling parts of his task, he again consults the producer about the lighting effects required; and these will be plotted, so that the stage manager and the electrician may have a lighting plot that will enable them to provide the required effects at the right moment.

A stage designer needs to have studied art under a professional teacher, so that he is able to portray clearly and accurately the scenes he is designing. Also, he should have a very sound knowledge of architecture and of furniture, pictures, and ornaments, without which he will sooner or later allow some bad error to appear. For instance, he might allow the steel engraving of a picture to hang on the wall of a room that was supposed to belong to an era before such engravings were made; or he might arrange for furniture that was out of its own period.

Almost all stage designers are their own masters, working for first one theatrical management and then another. This means that there can be no question of a pension or allowance when old age prevents further work. There is, however, a society known as the Association of Theatre Designers and Craftsmen which helps to ensure that stage designers, especially young and inexperienced ones, and others whose work is allied to that of stage designing, shall receive fair treatment in the matter of payment and working conditions.

See also PLAY PRODUCTION; THEATRE, HISTORY OF.

STAG HUNTING. Two sorts of deer are hunted by hounds in Great Britain: the fallow deer of the New Forest and the red deer of Exmoor. Only the bucks, or male deer, of the former are hunted, the hounds being known accordingly as 'buckhounds'. But of the red deer, both stags and hinds (male and female) are hunted: nevertheless, the hounds are known as 'staghounds'. The red deer hinds are hunted because, in the farmers' interests, the numbers must be reduced as much as possible—and this could not be done by hunting only the stags.

The organization of buck and stag hunting is in general similar to that of Fox or HARE HUNTING (qq.v.). The hounds themselves are of foxhound breed: in former days staghounds were considerably larger than foxhounds, but nowadays they are about the same size. As with fox and hare hunting, anyone who wishes to understand the sport fully must know a great deal about the natural history and habits of the DEER (q.v. Vol. II).

It is often said that 'Foxhounds hunt *a* fox; stag (or buck) hounds hunt *the* stag'. By this is meant that any fox is legitimate quarry for a pack of foxhounds, whereas deerhounds are only allowed to pursue certain deer. This calls for a different method in the handling of the two packs. In 'drawing' for a fox, the whole pack is used together; in looking for a stag or buck, however, only a few hounds, known as.

STAG HUNTING

From an engraving of 1821

'tufters', are employed, the main body not being released until the stag has been found.

The night before a meet is held, a man known as 'the harbourer', who has a thorough knowledge of the country-side and of the habits of the deer, makes inquiries in the neighbourhood as to the whereabouts of a 'warrantable' deer, that is, a deer of the right age and size. Early in the morning the harbourer goes out and attempts to track the deer to where it is lying. At the meet he passes on the information to the huntsman, who 'draws' for this particular deer with the tufters. Now, the selected deer will in all probability be one of several, possibly one of a whole herd. It is the job of the tufters to separate it from the others and to force it into the open, where the main body of the pack can be laid on without much fear of their following the wrong deer. Very steady, well-disciplined hounds are needed for tufting—hounds that will instantly stop at the word of command should the huntsman see that they are on the line of the wrong deer. In hind hunting, tufters are not used, a whole herd of deer being hunted by the complete pack, until eventually one breaks away from it, and on that one the hounds are laid.

Red deer particularly sometimes give very long, straight hunts—in general, longer than does a fox. When tired, a red deer generally 'soils'—that is, takes to water—and it is often in water that he is killed. Nowadays, as soon as the pack reaches the deer, he is shot by the huntsman, who carries a small rifle on his saddle for the purpose. There is, thus, nowadays no question of a deer being 'torn to pieces' by the hounds. Many people feel that it is cruel to hunt or to kill so beautiful a creature as the red deer. But beautiful as they are, deer do incalculable

damage to the crops of the farmers, particularly to root crops.

There are a few packs which hunt tame or 'carted' deer. This animal is taken by lorry to the meet, where it is let loose and allowed to go where it likes across country until it is tired or bored, when it stops. The hounds are laid on to its line, and hunt up to it, but do not harm it in any way. It is then taken back into its lorry, to repeat the performance another day. Like DRAG HUNTING (q.v.), this is a very artificial form of sport. Drag-hounds and carted-deer hounds provide their followers with a chance to ride across country: but they do not provide real hunting.

See also DEER STALKING; HUNTING, HISTORY OF.
See also Vol. II: DEER.

STAMP COLLECTING. The world's first postage stamps were issued by Great Britain on 1st May, 1840, and could be used for postage on 6th May. The stamps were the Penny Black and Twopence Blue, showing the head of Queen Victoria. People began to collect stamps about 1855. The first serious collectors seem to have been the French and Belgians, although Dr. J. E. Gray, an official of the British Museum, claimed to have begun collecting stamps soon after they were first issued. For many years stamp collectors were regarded as cranks, and were called uncomplimentary names,' such as 'timbromaniacs'. A French collector coined the term 'philately', made up from the Greek words *philos* (lover of) and *ateleia* (that which exempts from tax)—because if a stamp is stuck on a letter, no further postage is payable. The word is now applied to the study of stamps.

The first stamps were not perforated, and had to be cut apart with scissors or a knife. Great

(Left) 1d. BLACK, BRITISH, 1840; (right) 4d. CAPE OF
GOOD HOPE TRIANGULAR WOODBLOCK
L. N. & M. Williams

Britain was the first country to issue perforated stamps in 1854, having adopted the method suggested by Henry Archer, an Irishman, of punching small holes in the margins between the stamps so that they could be torn apart instead of being cut. Perforations are measured by counting the number of holes occurring in the space of 2 centimetres; stamps with differing perforations, though otherwise the same, may vary enormously in value. Colours also may influence value because printings in certain hues are sometimes small. In the same way a watermark can affect the rarity of a specimen. Errors of colour and watermark occur in a number of stamp issues, among the best known being the Cape of Good Hope triangular 'Woodblocks', 1d. coloured blue instead of red, and 4d. coloured red instead of blue; and the Transvaal 1d. of 1905 watermarked 'cabled anchor' instead of 'multiple crown CA'.

At first, stamp collecting was carried out in a rather haphazard way. Varieties of perforation and watermark were disregarded: if two stamps were of the same design, value, and colour, they were considered identical. A French philatelist, Dr. J. A. Legrand, wrote the first book about watermarks, and invented the perforation gauge in 1866. Since then the study of stamps has made much progress, and philately is now a serious pursuit, requiring for its full satisfaction a knowledge of printing, paper-making, geography, and history.

The number of collectors throughout the world already runs to many tens of millions and is constantly growing. The stamp trade, especially in the United States of America, is a large industry. Collectors have formed themselves into clubs and associations, some of which have members in many parts of the world. The Royal Philatelic Society, London, has a comparatively small but select membership of some of the world's leading philatelists. The Junior Philatelic Society, of London, is the largest of

its kind in the British Empire. The American Philatelic Society, of Chicago, has the world's largest membership. Apart from these and other national societies, there are thousands of smaller local clubs, all of which help collectors to increase their knowledge and add stamps to their collections by exchange or sale.

The late King George V took a keen interest in the hobby, and formed a magnificent collection of British Empire issues, which is housed in more than 300 albums at Buckingham Palace. King George VI formed a collection of issues of his own reign. Thomas Keay Tapling formed an almost complete collection, which he bequeathed to the British Museum in 1891. The world's greatest collection was formed by Philipp la Renotière von Ferrary, an Austrian nobleman who died in 1917. Most of his collection was auctioned in Paris and fetched £402,000. Another great collection was that of Col. E. H. R. Green, of New York, which also was sold for about £400,000. The most valuable stamp in the world, the British Guiana 1856 1-cent black on magenta, was in the Ferrary collection and brought £7,343 at a sale in 1922. In 1940 this stamp—of which only one specimen is known—was sold for about £10,000. The first (1850) issue of the same colony includes another great rarity, the 2-cents black on rose, of which ten examples are known. Other famous rarities are the 1d. and 2d. 'Post Office' Mauritius, worth about £2,500 each—in all only twenty-six specimens have been discovered. Notable foreign rarities include the Swedish 1855 3 skilling-banco, coloured in error yellow instead of green; the Hawaiian 1851 2-cents blue, the Boscawen (U.S.A.) 1846 5-cents, and the Lockport (U.S.A.) 1846 5-cents, of each of which only one specimen is known to exist.

Stamps are collected either used or unused, and some collectors include both kinds in their

(Left to right) HAWAIIAN 2-CENTS BLUE, 1851. BRITISH
GUIANA 1-CENT BLACK ON MAGENTA, 1856. 2d. POST OFFICE
MAURITIUS. *L. N. & M. Williams*

albums. Most of the early issues are rarer in unused condition; but many modern stamps, of which large numbers have been sold to collectors, are rarer when they have been used. The value of a stamp depends to a large extent upon its condition: if it is torn, creased, rubbed, off-centre, or unused without gum, its value is much lower than that of a perfect specimen, and may even be nothing at all.

When beginning, most collectors prefer to form a general collection, which includes stamps of all countries; but after some experience has been gained, the collector often begins to specialize, and the collection is then limited to the issues of a group of countries, of a single country, or even to one issue. It is by studying an issue of stamps intensely that philatelic knowledge is gained and new discoveries are made. Collections are also made of stamps portraying particular themes, such as art, sculpture, sport, music, or some other special subject. More than 200 magazines on stamp collecting are published regularly throughout the world. Priced catalogues of stamps, published every year, are an essential part of the collector's equipment, not so much because of the guide to values, but because these books contain a huge amount of information about the various issues of stamps.

See also Vol. IV, STAMPS.

STEEPLECHASE, *see* GRAND NATIONAL; HORSE-RACING; POINT-TO-POINT.

STREET ENTERTAINERS. The profession of the street entertainer goes back to the very beginnings of entertainment. Actors and musicians, like ACROBATS, JUGGLERS, JESTERS, and CONJURERS (qq.v.), were wanderers who strolled the streets, living on what they could pick up from an ever-changing and sometimes unwilling audience at fairs, markets, and other public places. Street entertainers of this kind were to be found, both in troupes and singly, in the ancient Greek, Roman, and Egyptian, civilizations, as well as in Eastern countries where they are still more numerous than in Europe, and where begging, even unaccompanied by entertainment, has always been a more or less legitimate 'profession'.

Long before the Norman Conquest strolling entertainers were common in England. The Anglo-Saxon 'gleemen' travelled in troupes, which, included jugglers, tumblers (both male and female), conjurers, play-actors, all kinds of singers and instrumentalists, and the keepers of dancing bears and monkeys (*see* PERFORMING ANIMALS). Even as early as the 10th century there seems to have been some distinction between the highly skilled musician and singer, later known as the MINSTREL (q.v.), and the humbler entertainer, whose performance included a good deal of buffoonery. The gleemen were known as 'jongleurs', a word which by the 14th century had come to include all lighter entertainers.

Amongst these wandering entertainers there were always disreputable characters—beggars, cardsharpers, pickpockets, fake fortune-tellers, and others who, though legitimate 'entertainers', eked out their earnings by various forms of roguery. By the 16th century vagrants had become a serious problem, for their ranks were swelled by soldiers returned from the wars, many of whom were unable to find work and took to a wandering life. Bear-wards made the roads unsafe, for their bears were often savage; bowling-alleys were set up, outside which 'bawkers' (criers) bawled out invitations to the passers-by; and many vagrants combined street-hawking with a kind of lower-grade minstrelsy—they became pedlars, like Autolycus in *The Winter's Tale*, selling and singing ballads as well as trading in odd trinkets and trifles. Many of the ballads were not only coarse but were also seditious; and this was one reason why Queen Elizabeth introduced the vagrancy laws, imposing the severest penalties upon all 'fencers, bear-wards, common players in Interludes, minstrels, jugglers, pedlars, tinkers, and petty chapmen', who plied their trade without a proper licence from at least two justices of the peace.

STREET ENTERTAINERS IN THE 19TH CENTURY
From a caricature of about 1830

This and later legislation did much to thin the ranks of the strolling entertainers. Even so, the street-noises of the 18th century were hardly less varied and raucous than those of Elizabethan days. From the Middle Ages onwards, a kind of 'entertaining' had always been combined with business—the traditional street cries, such as 'Sweet-scented lavender', or 'Have you any work for a tinker?', had distinctive and melodious tunes. Hawkers, newsvendors, and postmen generally accompanied themselves on horns and handbells, and cried or sang to declare their presence. The ballad-makers, though no longer so numerous, still persisted even into the early days of the 19th century. Their ballads were often abusive—in fact, one could pay to have an insulting ballad composed about an acquaintance and hear it sung in public within a few hours. St. Paul's churchyard was a favourite collecting-ground for ballad-singers, and they would often keep up their performance until 11 o'clock at night, mingling their songs with the cries of the beggars who gathered at the same spot.

In the 19th and early 20th centuries foreign entertainers were common in English streets, probably because, after the Napoleonic wars, England was more prosperous than continental countries. There were still bear-wards, until the quarantine laws made it impossible to import the dancing bears, and Italian organ-grinders with their performing monkeys were familiar figures until Mussolini recalled them to Italy. There were also German Bands, of from six to fifteen players, all Bavarians, who worked at home at some trade in the winter and migrated to other countries as musicians in the summer. These were not heard in England after 1914.

The economic crisis and unemployment of the 1920's and early 1930's brought a revival in street music—excellent choirs were formed in some mining districts, and there were also many groups of instrumentalists, including violinists and one-string fiddlers. The performance of the solo-singer—perhaps as a result of the depression—tended to become more and more a matter of hymn-singing and the singing of the long, tragic, narrative songs which had been so popular with the Victorians, instead of the gay songs of earlier times. Pavement artists were also frequently to be seen. At one time they drew with coloured chalk actually on the city pavements, sometimes showing considerable skill; but as most modern pavements will not take the colour, they now usually prop up against the wall chalked pictures on canvas or wood, with a notice bearing the traditional words, 'All my own work'.

Among the most familiar street entertainers to-day are the 'buskers'—a word which used to be applied to the pedlars and ballad singers who frequented bars and tap-rooms, and is now always used of these who entertain the theatre queues. 'Busking' is also theatrical slang for 'improvising'. Its origin is uncertain, but it may, perhaps derive from a nautical expression 'to busk' (to cruise about as a pirate), for it seems to refer to the casual nature of the profession. Busking is often a father-to-son occupation. The busker's repertoire is usually small because he plays to an ever-changing audience. Most of them are singers, accordion players, or jugglers;

but some have more interesting tricks, such as standing on the head on a bottle or cutting intricate lace doilies from folded paper. There are also 'escapologists', whose skill lies in breaking free from the most complicated bonds.

Street entertainment is generally more common in continental countries than in England. In Italy, especially, street music is often to be heard, particularly on the canals in Venice, where, during the tourist season, bands and singers perform for the holiday-makers.

See also MINSTRELS; WAITS AND CAROL SINGERS.

STREET GAMES. Most of the games played on the pavements, in the gutters, and among the buildings of modern towns are variations of older games which existed long before the towns were built. They first appeared as street games when towns grew so large that it was no longer possible for children to reach fields and open spaces easily. Some of them now seem to belong essentially to the street, and tend to die out as children's playing conditions improve; but most of the others are merely outdoor games, which can equally well be played in school playgrounds, gardens, back-yards, or fields.

Many of the games tend to appear at certain seasons, often apparently to celebrate some holiday or religious festival. Their origin may go back still farther to ancient pagan RITUAL (q.v. Vol. I)—a game, for instance, may have

A BOY TRUNDLING A HOOP
From a Greek vase of about 500 B.C. Ashmolean Museum

grown out of a fertility dance, performed at the turn of the year, and inspired by the idea that the crops would grow as high as one could leap (see FOLKLORE). Indeed, such games as skipping, see-sawing, and swinging are all thought either to have grown from dances expressing this idea, or from those expressing the ritual of work, such as sowing and harvesting. The seasons of games used to be strictly observed, and it was considered permissible to steal any toys which were played with 'out of season'.

Boys' games with whips and tops are exceedingly old, and were played by boys in ancient Greece and Rome. They were played in England as early as the 14th century and probably earlier. There used to be a curious custom for a parish or town to own its own top—for what purpose is uncertain. The phrase 'to be whipped like a parish-top' is often found in Elizabethan plays. Tops were probably connected with some ceremony in the early Christian Church, for they were always played with on Shrove Tuesday, and still belong to the period of early spring. The simplest game is played by one child with the ordinary whipping-top. The whip is wound round the top, and withdrawn with a sharp pull to start the spin; then it is used to whip up the top to greater speed—the object being, of course, to keep the top spinning as long as possible. Other games involve making it travel along the ground, or spin at high speed within a circle, falling just outside it. Peg-top is played by several players, the object being to split one top by spinning another against it and so release the peg, which is kept as a trophy by the winner. There are many different kinds of tops —those spun by hand, such as the 'tee-to-tum', mechanical tops, humming-tops, and tops named according to their shape or the kind of game played with them, such as mushrooms, racing-tops, boxers, and window-breakers.

The equivalent girls' game for Shrove Tuesday is Battledore and Shuttlecock, played with a wooden or catgut bat and a shuttlecock made of dyed feathers stuck in a cork. The player keeps on hitting the shuttlecock up into the air as long as she can. The game has its origin in rituals used for divining the future, and is traditionally played to the accompaniment of some of the same rhymes which are said when cherry-stones or daisy petals are counted —'This year, next year, sometime, never', and 'Tinker, tailor, soldier, sailor'. The shuttlecock

is regarded as a sort of oracle, one old formula beginning:

> Shuttlecock, shuttlecock, tell me true
> How many years have I to go through?
> One, two, three, four, . . . and so on

These same kinds of rhymes and songs sometimes accompany skipping—traditionally a game for Good Friday, but now a popular girls' game throughout the spring and summer. Skipping games for one player all involve keeping up as long as possible, performing such tricks as accelerating the speed, crossing hands, skipping backwards or on one leg, to the accompaniment of traditional counting rhymes. Most of the rhymes such as 'Pop goes the Weasel' are used in other games as well; but some, notably 'Salt, Mustard, Vinegar, Pepper' in which each word represents different speeds of turning the rope, are peculiar to skipping. In other games two players turn the rope, and several others follow one another through, as in Chase the Fox, sometimes each performing some action, such as turning round (Winding the Clock), or picking up

a stone (Baking Bread), with appropriate rhymes and sayings.

Hoops bowled with sticks are toys of ancient origin, traditionally associated with the autumn. MARBLES (q.v.) is a boys' game, now played in the streets at any time, but formerly played only during Lent. Grottoes was a quaint game for small children in Catholic countries, played only on St. James's Day. The grottoes, made with a grass edge, were square, round, or heart-shaped, and were filled with pretty fragments.

Most other games belong to any time of year. Conkers (or Coggers) is now played, of course, only when horse-chestnuts are in season; but once it was played at any time with snail-shells or walnuts, which were originally held in the fingers instead of threaded on a string. The name comes from 'conquerors'. A veteran conker, which has broken up many rivals, is a valued possession. Knucklebones or Hucklebones, now usually played by girls under the name of Five-stones, though not seasonal, is subject to sudden waves of popularity. It was originally played with knucklebones from legs of mutton, which were thrown up and caught in a variety of different ways. It was certainly known both to the ancient Greeks and to the Romans who are thought to have spread it in Europe. It is also known, however, in such countries as Japan and Russia where the Romans never penetrated. Fivestones is generally played with four square stones and one round one, the round one being thrown up and the others gathered up in different ways before it comes down. There are innumerable formulas for doing this: the stones are caught on the back of the hand, several are picked up at once, and so on. Similar games, such as Chucks, Dibs, Checkstones, and Gobs, are played with knucklebones, or with marbles, pebbles, or cherry-stones.

Two street games apparently also familiar to the Romans were Leap-frog and Hop-scotch. In Leap-frog one player bends over, with his hands on his knees, in a frog-like position: then the others in turn put their hands on his back and jump over him, each 'making a back' when he has jumped, so that the last player has to jump over them all. There are dozens of versions of the game, some of them, such as 'Warnie, I'm Coming', being singing games. Hop-scotch has many versions in different countries. A chart of several spaces, usually seven (in many possible patterns) is chalked on the ground, each one numbered.
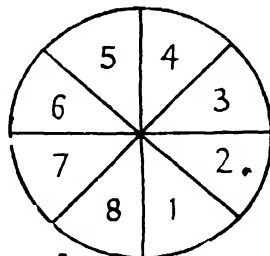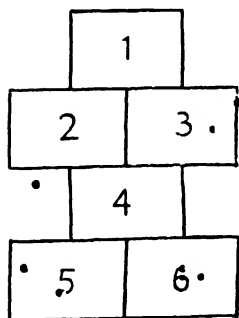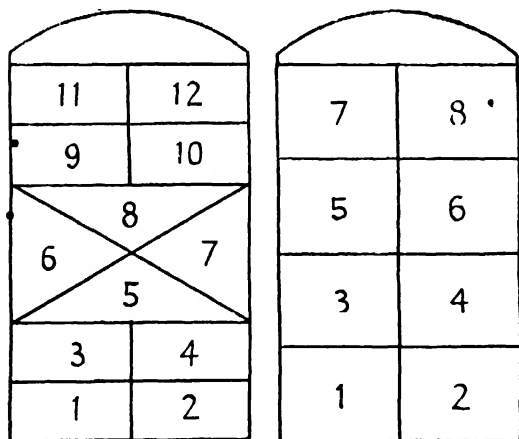
SOME HOPSCOTCH PATTERNS

The player hops through each space (or court) in order, without touching the lines, performing certain actions with a stone as he goes. Hop-scotch is thought to have been connected with myths about labyrinths and mazes, but later to have been adapted to Christian tradition and to represent the progress of the soul from earth through various intermediate stages, the last court often being known as 'paradise' or 'glory'.

Ball games, many of them very ancient, are popular in the street because they give scope for spontaneous invention. Solo bouncing games are often accompanied by the same kind of divination rhymes as are skipping and battle-dore and shuttlecock. The ball is bounced on the ground or against the wall, and various actions, such as clapping hands or turning round, have to be performed before it is caught again. There are many variations of catching games for two or more, such as Pig-in-the-Middle, in which a centre player tries to intercept the ball. In games such as Monday, Tuesday, the players take the names of days of the week or months of the year; one player throws up the ball and calls the name of another, who must catch it and throw it at one of the others; the others must stand still while he has the ball, but may run away if he drops it. There are also variations of ROUNDERS, CRICKET, or FOOTBALL (qq.v.) adapted to suit the street.

Most popular of all are the chasing games, of which the basic kind is Touch (called variously He, Tig, Tiggy, It, and so on). One player, chosen as catcher by a counting-out rhyme, chases the others until he touches one, who then takes his place. The game may be an imitation of hunting, but it clearly has some connexion, too, with primitive superstitions, the player who is 'he' probably representing the devil. Sometimes the players are safe if they touch iron, or, more usually (as in Tiggy, Tiggy, Touchwood), if they touch wood. Iron in pagan superstition is a recognized guard against evil spirits; and wood in Christian tradition represents the Cross. Players may call a halt in the game if they shout 'Pax' (peace) or 'barley' (of which the origin is uncertain). There are many variations: French Touch, in which the player must put his hand on the place where he is touched, or Widdy, Stag-a-lony, or String-He, in which the players as they are touched join hands to form a long chain. This has various accompanying rhymes.

A GAME OF BATTLEDORE AND SHUTTLECOCK
From Kate Greenaway's *Book of Games*, 1889

More elaborate developments of the Touch game, such as Prisoner's Base or Tom Tiddler, show an obvious imitation of war, and all resemble an old game, mentioned by many Elizabethan writers, called Barley-break or The Last Couple in Hell. This game was played by three couples, one of whom, with linked hands, occupied the central territory—'hell', and tried to catch the others as they advanced from either side. In modern versions two bases are chalked on the ground, and all who are caught are confined in the enemy base, until they are released by a touch from another player who is still free.

There are countless other traditional street games, such as Follow-my-Leader and Puss-in-the-Corner, which we cannot describe here. Some grow up and die out within quite a short period: others become established favourites not only in the street (*see* PARTY GAMES). Some of the oldest games are now lost, leaving only their picturesque names —Swimming in Blue Water, Dead Man's Dark Scenery, and Green Man Rise-O. How they were played we do not know.

See also SINGING GAMES; HIDING GAMES; PARTY GAMES. See also Vol. I, FOLKLORE.

STRING INSTRUMENTS. These can be divided into three main groups: those in which the sound is produced by plucking the strings, such as the HARP and LUTES AND GUITARS (qq.v.); those which are struck, such as the piano and harpsichord (*see* KEYBOARD INSTRUMENTS); and those which are played by drawing a bow across the strings, such as the HURDY-GURDY, VIOLS (qq.v.); and the members of the
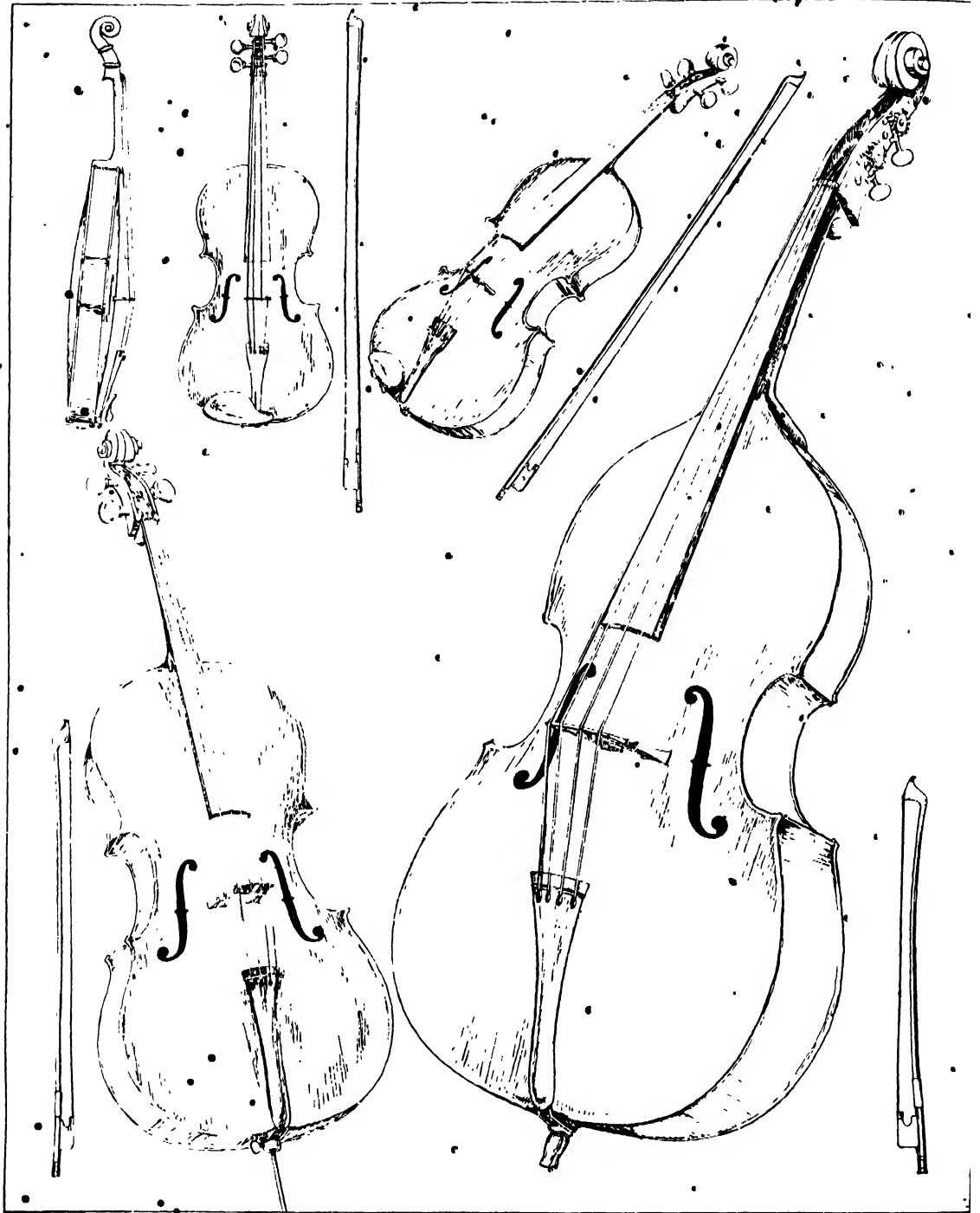
TOP (LEFT TO RIGHT): VIOLIN (SIDE AND FRONT VIEWS) AND BOW; VIOLA AND BOW
BOTTOM: 'CELLO AND BOW; DOUBLE BASS AND BOW

violin family. It is these last instruments which are described in this article.

There are four members of the violin family: the violin itself, the viola, the violoncello or 'cello, and the double bass. They are all developed from the various types of viols of the 16th century, at first existing side by side with them, and later superseding them in the same way that the piano superseded the harpsichord. From the 17th century the 'strings', as they are called, have formed the basis of the ORCHESTRA (q.v.). In a modern orchestra with forty players there may be twelve first violins, ten second violins, eight violas, six 'cellos, and four double-bass. They are also used frequently in chamber music, the usual combination in a string quartet being two violins, one viola, and one 'cello.

All these instruments have wooden sounding boxes, over which strings of gut or wire are stretched. The violin is the smallest and has the highest pitch, the others being respectively larger and deeper in pitch. The violin and viola are held beneath the chin, and the 'cello and double-bass are supported on the floor. Each of the modern instruments has four strings, except for the double-bass, in which the number varies between three and five.

The tuning of the instruments is as follows:

Violin.	Viola.	'Cello.	Double-Bass.	(Sounding octave lower.)
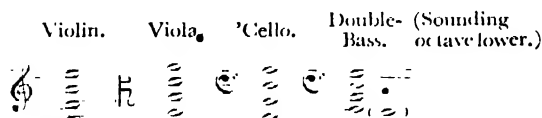
(Other tunings of double-bass are sometimes used.)

These notes are called 'open' notes as distinct from 'stopped' notes, which are produced by stopping or pressing the string against the finger board with a finger of the left hand, and so shortening it. Certain notes other than open notes can be produced with an 'open' effect by lightly placing the finger on the string instead of stopping the string firmly. Notes so produced are called 'harmonics' (see MUSICAL INSTRUMENTS). There are many examples of exceptional tunings used by composers for special effects; Saint-Saëns, for example, tunes the 1st string of the solo violin in his *Danse Macabre* to Eb, so as to give the effect of an out-of-tune violin.

The range of each of the instruments extends upwards from its lowest open note for four octaves, although in the case of the double-bass the upper octave is seldom used. This means

that the total range covered by the violin family is normally from the second E below the bass stave to the second F above the treble stave.

Each instrument is usually played by drawing a bow across the strings. The bow was originally a short convex or bow-shaped stick, from the ends of which hairs were stretched. The present bow, which has a concave curve to the stick, was designed by François Tourte (1747–1835). It is easier to handle and is capable of more delicate and subtle changes in style of playing. The bowing may be either: 'slurred'—that is when two or more notes are played in one movement of the bow; 'detached'—a separate movement for each note; 'staccato'—very short and detached; 'legato'—smooth; or a combination of two or more of these methods. Other methods of playing are, however, also used: 'pizzicato'— that is, plucking the strings; 'col legno'—hitting the strings with the back of the bow; and 'slapping'—hitting the strings with the hand, a device frequently used with the double-bass by dance band players. Two or even three-note chords can be sounded on one instrument, but written four-note chords are produced by rapidly drawing the bow across the four strings making an arpeggio-like sound. A muted effect is produced by placing a small wooden or metal clamp over the bridge. When mutes are required the music is usually marked 'sordini'.

The most famous violin makers were the members of the Amati and Stradivari families, most of whom worked in Cremona in Italy in the 16th, 17th, and 18th centuries. Their violins are greatly prized to-day.

See also MUSICAL INSTRUMENTS, HISTORY OF.

STUD BOOK, *see* GENERAL STUD BOOK.

STUDENT CHRISTIAN MOVEMENT, *see* CLUBS, BOYS' AND GIRLS'.

SURF-RIDING (SURFING). This sport consists of riding on a board which is carried along by the force of a broken wave. For good surfing, a beach must be exposed to large waves coming in from the ocean, for small waves do not have enough power to carry the board any distance. Also, the beach must slope gently, as waves do not break until they reach shallow water, and on a steeply sloping beach they break so close to the shore that there is no room for a surf-ride. English beaches are rarely suitable; but the shores of the Pacific are ideal for surfing. In
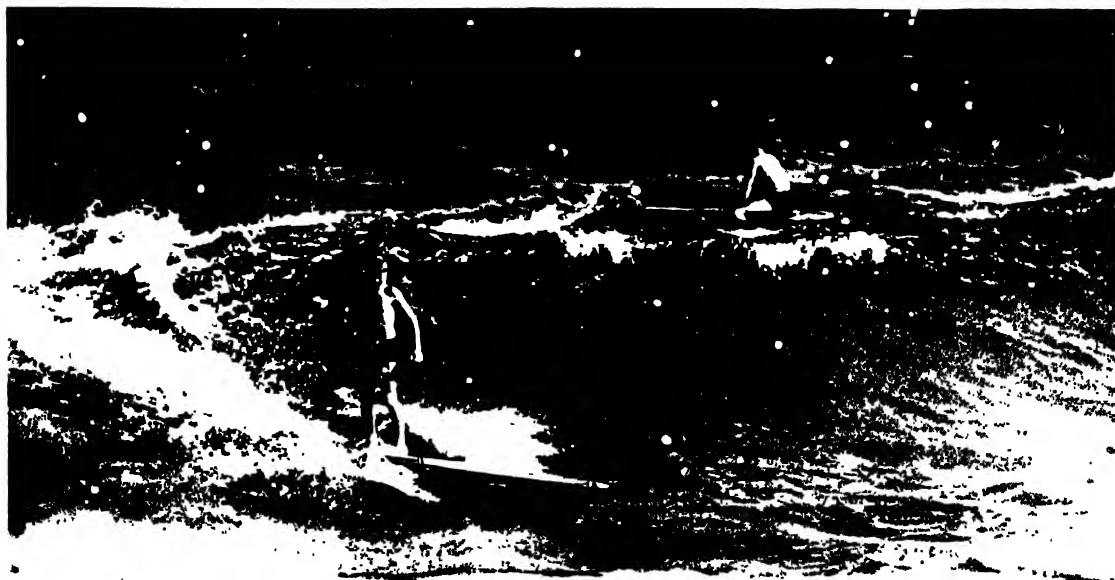
SURF-RIDERS OFF THE AUSTRALIAN COAST

The surfer on the left leaves a wake of foam as he is carried forward by a wave. On the right a surfer waits for a wave.
The photograph is taken with a telescopic lens: the surf-riders are hundreds of yards off-shore
Australian News Information Bureau

consequence the sport is particularly popular in Australia and New Zealand, and also in Hawaii. Good conditions are also found in South Africa. A surf board is a plank about 1 foot by 7 or 8 feet in size. It is easy to learn to use it. The surfer carries the board to where the waves are breaking, and waits for a specially large one. When he sees it coming, he stands facing the shore, holding the board upright with the lower end resting on his hips. As the wave breaks, he jumps ahead of it on to the board, lying face downwards. The force of the water then carries him at considerable speed towards the shore. The undertow of receding water makes many surfing beaches dangerous, and often life-saving boats are kept ready to rescue those who get into difficulties.

In some popular seaside resorts the sport of surfing has given rise to the much more expensive sport of aquaplaning. For this the rider stands upright on his board, which is towed behind a fast motor-boat. Any stretch of water is suitable for aquaplaning which is, compared with surf-riding, an inferior sport.

SWEEPSTAKES, *see* LOTTERY.

SWIMMING. It is possible for everyone to swim, for the body contains sufficient air to enable it to remain on the surface, provided breathing is properly maintained. Sea water has a greater density than fresh water, and is more buoyant. Some water, such as the Dead Sea, is so dense that it is difficult to keep the body sufficiently low in the water to swim. Swimming under water requires the effort, not only of holding the breath, but of combating the natural tendency to come to the surface.

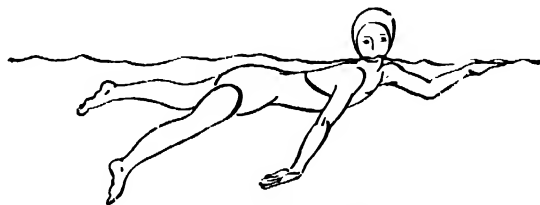Although people living near water have always enjoyed swimming, bathing became popular

FIG. I. DOG PADDLE

only towards the end of the 18th century (*see* SEASIDE RESORTS). It is now recognized as a

very healthy sport, for not only is the water itself beneficial, but swimming exercises every muscle of the body. Doctors and surgeons prescribe swimming to help invalids to regain their strength and the use of their limbs. There are swimming-baths in most towns, some under cover where the water is heated all the year round, and some in the open. The normal temperature of a bath is 55° to 60° F., and the water is usually run continuously through the bath, being purified before being returned to it.

The most elementary swimming stroke is the dog-paddle (Fig. 1). The arms are alternately pushed forward in line with the chin and pulled down to the waist in an action similar to that of a dog swimming; at the same time the legs are drawn up and kicked out.

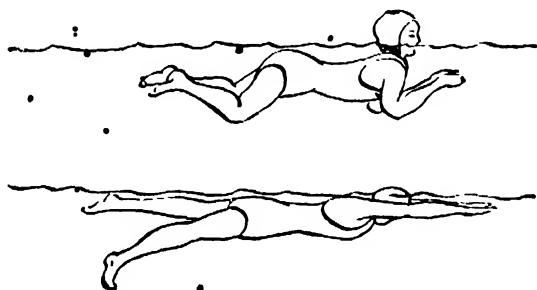The breast-stroke (Fig. 2), which is more graceful than the dog-paddle, starts with the

FIG. 2. BREAST-STROKE

hands held palms downwards and the wrists close to the chest; they are then pushed forward to the full extent of the arms and pulled back with a wide sweeping movement, pressing slightly downwards, until they are extended sideways from the shoulders. From here they return to the chest for the next stroke. There are three movements of the legs corresponding to the arm movements. With the feet together and knees apart, the legs are drawn up and shot out to the 'straddle' position, then brought smartly together again. The legs are brought together as the arms push forward, so that the body, fully stretched as it balances on the water, is sent forward in a glide. The stroke is smooth and unhurried, the swimmer breathing in at the pull, with the mouth slightly raised above water, and breathing out at the glide forward.

The crawl (Fig. 3) is the fastest stroke and is used for all free-style racing (see SWIMMING RACES). When first introduced it was said to be

of use only for short distances, but it has been developed for marathon swims. It is entirely different from the breast-stroke and, in the arm movement, is a development of the dog-paddle. The arms work alternately; one is lifted clear of the water and is pushed forward to break the surface of the water just in front of the head; then it is pulled down and back in a straight line as far as the thigh. As one arm completes its

FIG. 3. FORWARD CRAWL

pull, the other enters the water. The secret of a successful crawl is to relax on the recovery movement, using all the energy on the pull. The leg movement is simple but difficult to co-ordinate with the arms. It is a 'thrash', with the legs kept straight and moved up and down from the thigh. The normal timing is six beats to a complete arms' movement, three to each individual arm pull. The head is turned to one side to snatch a quick breath when the arm on the opposite side is pulling. Only the head is turned, the body being kept straight so that the regularity of the leg beat is not interrupted.

There are two main types of back-stroke swimming, the old English style—a kind of inverted breast-stroke, and the back crawl (Fig. 4) which is the more popular. The leg movement is similar to the crawl, and the arms work
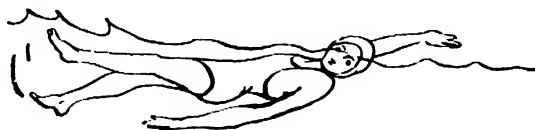

FIG. 4. BACK CRAWL

alternately, either being brought straight over the head for the start of the pull or moving in a wide sweep. As each arm enters the water it moves slightly wide and downward, returning to the thigh.

The trudgen, invented by a man of that name, was faster than the breast-stroke and was used for racing until the crawl superseded it. It has an over-arm movement, while the movements of the legs are the same as for the breast-stroke.

See also CHANNEL SWIMMING; DIVING.
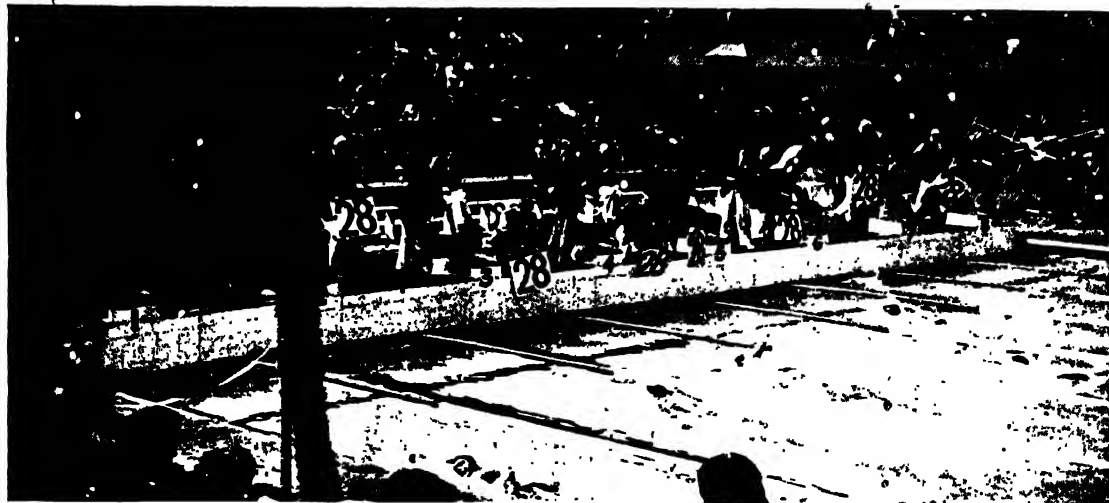
THE MEN'S 1,500 METRES FREE-STYLE SWIMMING RACE AT THE EMPIRE POOL, WEMBLEY, IN THE OLYMPIC GAMES, 1948
Television cameras are seen on the left.   *B.B.C.*

SWIMMING RACES. These can be held over any distance, but there are a number of recognized standard races. For English and other important championships these are the 100 yards, 220 yards, 440 yards, 880 yards, and 1 mile free-style; 150 yards back-stroke; and 200 yards breast-stroke. The average swimming-bath is 33⅓ yards long—3 lengths to the 100 yards—and most races in these are kept below 440 yards, larger pools being used for longer races. Where the bath length cannot be equally divided into the required distance, it is necessary to finish the race on a pole suspended across the water. As this is inconvenient, it is usual at most galas to run the races to a specified number of lengths. Few events are over 200 yards, unless they are championships. The 100 yards is perhaps the most common race, and sprints of one or two lengths are also popular.

The three main strokes—crawl, breast-stroke, and back-stroke (*see* SWIMMING) give three different types of races. The crawl, being the fastest, is employed for all free-style events. A fourth type of race which is gaining in popularity in England is the 'individual medley', in which the competitor swims each of the three strokes for an equal distance. There are also two kinds of team relay race: the medley, in which there are exponents of all three styles of swimming; and the free-style, in which all members swim the same stroke. The usual composition of a medley relay team is one back-stroke swimmer,

one breast-stroke, and one or two free-style, swimming in that order. Free-style teams are usually larger, six being the average number. Swimming races can be either scratch events or handicaps: in the scratch events, which include championships, all competitors start off together, but in the handicaps they start at intervals. In free-style and breast-stroke races the competitors start with a dive; but when using the back-stroke, swimmers push themselves off from the side of the bath. The starter gives only two words of command—'Take your marks' and 'Go'. At the first command, competitors take up position on the edge of the bath; and when they are perfectly steady the signal to start is given.

There are a great many swimming records—the most important being world records and Olympic records. In England there are two types of record, the Amateur Swimming Association records which are open to anybody but can only be made in England, and British native records which are restricted to British swimmers. There are also district, county, club, and bath records. In 1949 the world's amateur record of the 100 yards, free-style, was held by Alan Ford of America, in 49·4 secs. The women's 100 yards free-style record was held by Miss Nathanson of Denmark in 59·4 secs. The record time for swimming a mile is 20 mins. 4·2 secs, performed by R. Flanagan, U.S.A., in 1937.

SWORD DANCE, *see* FOLK DANCING, BRITISH.

T U V

TABLE TENNIS (PING-PONG). This is a minia-ture form of LAWN TENNIS (q.v.) played indoors on a table-top. The general principles of the two games are the same, although there are important differences in detail. There is some record of the game about 1880, but it did not become estab-lished until some years later, when the early cork or rubber ball was replaced by a celluloid ball. From 1900-4 'ping-pong', as it was then called, became very popular in Britain, America, and other countries; but it lost popularity quickly and did not revive until after the First World War. To-day it is increasingly played in almost every country in the world. The rules and equipment of modern table tennis were not standardized until 1922-3 in England and even later elsewhere; yet by 1939 over thirty nations had joined the •International Table Tennis Federation. The English Table Tennis Associa-tion, the E.T.T.A., headed the list of member countries with 260 leagues (comprising about 3,000 clubs) affiliated to it. The standard of the average player is still probably higher in Britain than elsewhere. The game has developed similarly in other countries. From 1926 to 1935 the Hungarians won most of the world's cham-pionship honours; since then the Czechs, Poles, and Americans have come to the front.

A standard table measures 9 feet by 5 feet, with the playing surface 2 ft. 6 in. from the floor. The net is 6 inches high, and extends 6 inches beyond the table on each side. Standard balls

weigh twelve or thirteen to the ounce and are marked 'E.T.T.A. Official'. The bat may legally be of any shape, size, weight, or material; but a wooden bat, faced with pimpled rubber, is the universal choice of modern players, sand-paper and cork facings having long gone out of fashion. The orthodox modern grip is shown in the diagram.

A game is always 21 points, and a set may be the best of three or five games. The service, which must bounce on both halves of the table, changes hands after each 5 points. Ends are changed after each game and at a score of 10 in any deciding game. The free hand must not touch the table during play. The ball must not be 'volleyed', that is to say, touched with the bat before it has bounced. Even if the ball is obviously going out, it must be allowed to fall. In doubles play the partners must play the ball alternately. Service in doubles must be from the right-hand half-court to the opposing right-hand half-court.

It is best to play most strokes from a sideways or at least half-sideways position, as this allows free play to the arm. Thus a right-hander will have his left shoulder forward for forehand strokes, and his right shoulder forward for back-hand play. The ball should be struck well away from the body, about three-quarter-arm's dis-tance on the forehand and slightly less on the backhand. All sharp, jerky strokes should be avoided, the movements of the arm and elbow being steady and smooth. An attack shot may be given a 'top' or forward spin, and a defence shot a 'bottom' or back spin.

TABOR, *see* PIPE AND TABOR.

TAILTEANN GAMES. According to the claims of Irish legend, these games were founded by Lugaid of the Long Arm some 3,000 years ago. If this is the case, they would probably be by far the oldest organized sports in the world. Certainly an Irish chronicler in A.D. 873 writes of their cancellation 'without just and worthy cause' as 'a thing we have not heard to happen from ancient times'. Probably, like the Greek OLYMPIC GAMES (q.v.), they had their origin in pagan rites round the tombs of dead heroes. They were held annually at Tailte, in Meath, and combined the character of an assembly for the giving of laws and the settling of disputes, a fair, an athletic gathering, and an exhibition

FOREHAND   BACKHAND
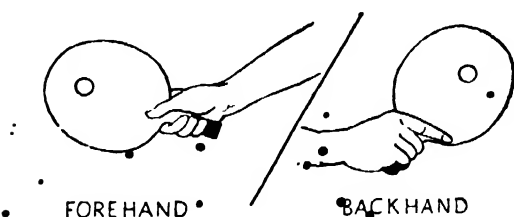
of the arts of music, poetry, and drama. Their long succession was broken by the Anglo-Norman invasion of 1167, and they were not revived until 1924. They were then held in Dublin, the intention being to make them a triennial event. This hope could not be realized, however, and there seems at present little prospect of a further immediate revival.

See also ATHLETICS.

TAMBOURINE, *see* PERCUSSION INSTRUMENTS.

TANGO, *see* BALLROOM-DANCING.

TATTOOS, *see* MILITARY TATTOOS.

TECHNICOLOR FILMS. Technicolor is the patent name of the process by which coloured films are made in England and America, though other processes are used in other parts of the world. Technicolor was brought out by Dr. Herbert Kalmus, a professor of the Massachusetts Institute of Technology, who, in 1917, began to apply himself to the problems of colour photography. In that year the first Technicolor laboratory was built in a railway coach at Boston, and later it was transported over the rails to Jacksonville in Florida for the production of the first Technicolor film, *The Gulf Between.* In 1923 a small Technicolor plant was established at Hollywood, where it produced, among others, *The Black Pirate,* starring Douglas Fairbanks, which was released by United Artists in 1925. In 1928 a film called *The Viking* was made—the first coloured picture to be synchronized with music and sound effects. Technicolor was still, however, only a 'two-colour' process, and it was not until 1932 that Dr. Kalmus brought out the 'three-coloured' process in use to-day.

The Technicolor system works, simply, on the principle that the whole spectrum of colour can be obtained by mixing, in various amounts and combinations, the three primary colours of light, blue, red, and green (*see* COLOUR, Vol. III). The Technicolor camera, therefore, has three negatives, one which is sensitive to blue light, one to red, and one to green. By an ingenious system of prisms, lenses, and filters, the camera takes all three negatives at once. One positive print is made by amalgamating these three negatives, and this reproduces all the colours which the camera has seen.

A film made in colour is much more com-plicated and usually costs about three times as much to produce as a film made in black and white (*see* FILM PRODUCTION). Atmospheric and weather conditions, and the amount of light on the subject at the time of photographing alter the colours; and as films have to be made in very short sequences, consecutive shots must be taken under exactly the same conditions or they will not match each other in colour.

In making a colour film, the whole of the picture has to be most carefully planned—the clothes, the colour of hair and faces, the colour of the furniture and settings, the material of curtains and carpets—so that a harmonious design results. It has been found that the quieter pastel shades of colour photograph more pleasantly than the more vivid colours; and red particularly has to be kept very subdued as it photographs more brilliantly than it appears to our eyes. Only a minimum amount of lipstick, for example, is used in colour photography. Green, too, can appear unnaturally vivid, especially in brilliant sunlight; that is why grass is sometimes scorched to a duller hue to give a pleasanter and more uniform effect.

It is easiest to take a coloured film in the studio, provided the subject is suitable, because the intensity, or strength, of the light, can be regulated and kept uniform. Even with a black and white film, camera-men use a meter to check the intensity of the light: and a uniform intensity is still more important in a colour film. About three times as much light is required for colour photography as is normally needed for black and white. If the film is taken in artificial light, it must be white light; so special arc lamps are used.

Filming out of doors presents many difficulties for the colour camera-men, as the sunlight varies in intensity from morning to night, and even varies in colour, becoming usually yellower in the evening. Thus in England from eleven in the morning until two or three in the afternoon in summer are the best hours for filming outdoor scenes in colour; but in tropical Africa, where the sun is due overhead at midday, it is best to film for about an hour just after sunrise and then at about four in the afternoon for an hour or two. This system was used in the colour film, *Men of Two Worlds,* which was largely made on location in Tanganyika, for it was discovered that the strong shadows and brilliant light at midday not only altered colours, but also

flattened out all the scenery so that there was no illusion of depth. In spite of the difficulties many colour films are necessarily made out of doors, because countryside and natural backgrounds obviously cannot be reproduced in all their various colours in the studio.

See also FILMS; FILM PRODUCTION; FILMS, DOCUMENTARY.

TELEVISION. This word means 'vision from afar'. When a scene is televised the television camera picks up light in the same way as any other camera and focuses an image on a sensitive surface. This surface changes the light energy into electric current—the brighter parts on the image giving more electric current and the shadows less. These varying electric currents are connected to the transmitter, where they affect the radio waves which the transmitter sends out. The waves are picked up by the receiving aerial which is connected to the television receiver. Here the electric current is reconverted into light, reproducing on the television screen the image formed by the camera. This, of course, is a very over-simplified account of the general principle of television, a more detailed account of which is to be found elsewhere (see TELEVISION, Vol. VIII).

This development of broadcasting began in Britain in 1936, when the world's first public service was opened by the B.B.C. at Alexandra Palace. The service was closed down for nearly 7 years during the Second World War, but started again in 1946. By adding sight to sound, television has given completeness to radio, just as the addition of sound gave completeness to the film.

There are two main kinds of television programmes: outside television, which shows distant events at the moment they happen, and programmes televised in the studios, either from actual performances or from films. The television studios bear a superficial resemblance to film studios, but the technique of production differs considerably. Unlike a FILM (q.v.), a televised play or ballet, variety entertainment, or scientific demonstration must be performed without a break from start to finish; and the producer must control the whole—lights, cameras, microphones, scene changes, entrances, and exits—as the programme unfolds.

Plays appear to be the most popular programmes, and they entail the greatest amount of effort, both technical and artistic. A television
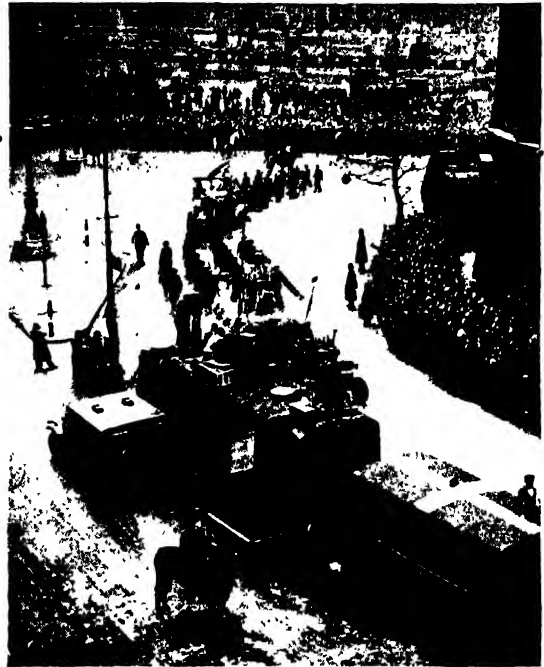
A TELEVISION OUTSIDE-BROADCAST UNIT
Televising the Lord Mayor's Show in Trafalgar Square, London, 1946. *B.B.C.*

play, running for about an hour and a half, involves about a month's preparation from the time the producer first confers with the scene-designer until the moment he climbs the steel stairway to the studio control gallery to direct the transmitted performance. If the production is an elaborate one, the scene department may have to construct battlements in plywood, or a New York quayside with real water, planning them so that three or four cameras are free to move easily to and fro, or swivel sideways without getting in each other's 'line of sight' or casting shadows. A fortnight or so before the day of performance the actors and actresses begin rehearsals, not in the television studios which are in constant use for current productions, but in ordinary rehearsal rooms. Floors are marked out to represent the position of scenery, and the cast play their parts before dummy cameras. Actual camera rehearsals in the television studio are usually only possible on the day of performance.

The producer, seated in a sound-proof cubicle overlooking the studio, faces two receiver screens, one marked 'transmission', the other 'pre-view'.

The first shows the picture which is being radiated to viewers, while the second provides a picture which the producer may select from any spare camera in the studio. It is on the 'pre-view' screen that he judges picture quality and the angle of the next 'shot', deciding whether the scene is correctly arranged for composition and distance before it is brought into the transmission circuit. Using a desk microphone, the producer can speak to the camera-men through their headphones, or to his studio manager, who 'cues' the actors and superintends operations on the studio floor. During rehearsal he can also address the whole cast through a studio loudspeaker.

Behind the producer is the 'vision mixer' at her switchboard. Acting on the producer's instructions, she can 'fade-out' one picture and bring in another from a different camera (this is called 'mixing'), or make a quick, clean change or 'cut'. It is also possible to televise from a film instead of from a real scene, where this is more convenient. When an outdoor scene cannot easily be portrayed in the studio, a film is taken, and this is shown before the television camera at the point where it fits. Superimposition effects are easily obtained by combining pictures from two or more cameras. Other technicians control the sound output from microphones distributed round the studio, and introduce 'effects', noises, and music from gramophone records.

Down in the studio the cameras, mounted on rubber-tired trucks known as 'dollies', move forwards or backwards for 'close-up', 'middle', and 'long' shots, or swivel to left or right (this is known as 'panning') according to the producer's instructions, as the play proceeds. Cameras are sometimes mounted on high rostrums to give oblique views from above. Poised overhead, rather like an immense fishing-rod, is a large arm or 'boom' with a hanging microphone, which can follow the players as they move across the scene. Other microphones are often concealed at strategic points behind scenery. During rehearsals the make-up assistants watch the performance on a television set in a darkened cubicle. Only by seeing the actors on the screen can they decide exactly what kind of make-up will suit each player. Television make-up is less intense than that used in film. The effect is of a light sun-tan. Costume colours must be chosen with care. The cameras are unsympathetic to bright reds, and tend to be thrown off balance by
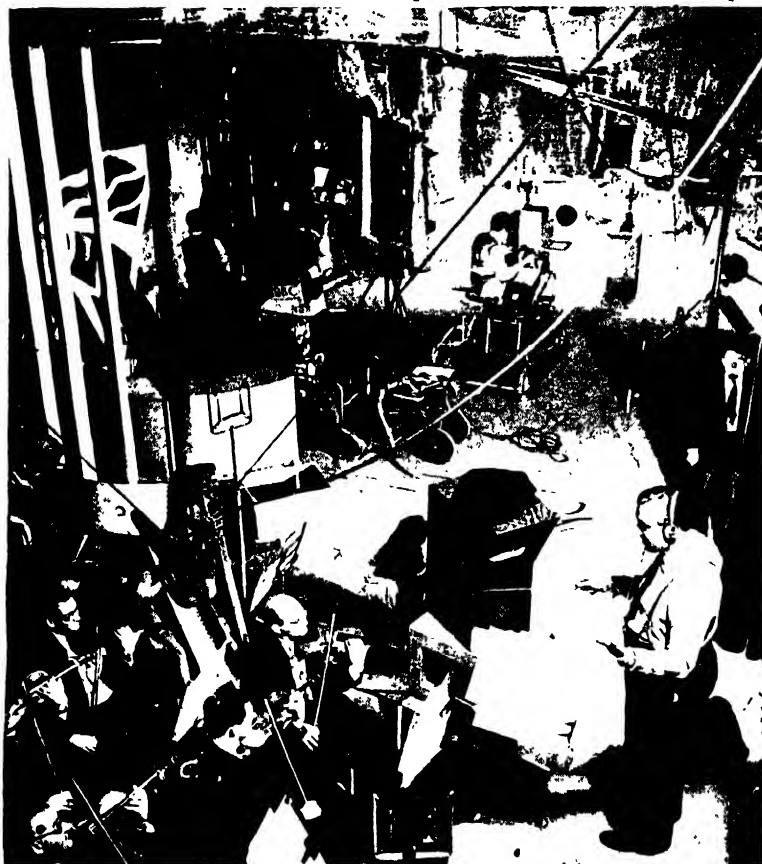
INSIDE A TELEVISION STUDIO AT ALEXANDRA PALACE, LONDON

The orchestra in the foreground is not being televised, and so the conductor watches the action on the screen in front of him and listens to the sound with earphones so that he can keep in time with it. In the centre, the No. 1 camera is focused on the singer. The producer stands behind the conductor, and behind him is the boom-microphone used to pick up sound from any part of the studio. *B.B.C.*

intense black or pure white. Men's dress shirts are usually given a buff tint.

The scope of studio programmes widens continually. Besides plays, viewers see music-hall shows and cabarets, often with the audience in the picture. Interviews with 'people in the news', ballet, opera, and musical comedy are all brought to the viewer in his home. Programmes of special musical interest, such as orchestral performances and recitals by distinguished soloists, are presented so that the actual appearance of the performer is emphasized as much as possible. The pictorial quality of television is also exploited in talks features, which often include televised film, and which seek rather to present a picture of the things being talked about than of the speakers themselves. From the television talk there has developed the 'documentary', which blends films, and sometimes maps and diagrams, with dramatized scenes in the studio. A typical television documentary dealt with the magistrates' courts in England, showing by a combination of film and studio scenes the case histories of the delinquents appearing in the dock during a typical sitting (see FILMS, DOCUMENTARY).

Outside broadcasts from mobile units in city streets, sports grounds, race courses, and other places where news is being made under our very eyes, will always grip the imagination more vividly than the most elaborately staged productions in the studio. The B.B.C. has a small fleet of mobile units. Each includes two or three television cameras, from which the pictures, fed through a mobile control-room, are sent by radio or special cable to the parent transmitters at Alexandra Palace, Sutton Coldfield, and other points whence they are broadcast to viewers in their homes. In the central London area the link is by a special cable which circulates within a short distance of most places of interest; but in more remote districts, pictures travel from the scene of action by means of a mobile radio transmitter.

Ceremonial occasions, such as the Cenotaph ceremony or the Trooping of the Colour, are televised, as are sporting events such as horse-racing, cricket at Lord's, or a visit to the Zoo. To cover the University Boat Race, not only a battery of cameras at strategic points along the river bank is required, but a camera on a launch following the crews. This floating camera uses a low-power portable radio transmitter to send the pictures to a relay point on the bank.

The technique of presenting an outside broadcast for television differs little from that of producing a programme in the studio. The producer's control-room, mounted in a lorry, is not unlike the interior of a submarine. He is confronted by the same two screens—'transmission' and 'pre-view'; but besides talking by telephone to the camera-men the producer can also speak to the commentator, who is usually equipped with a small television set to enable him to match his commentary to the particular scene that viewers are watching at the moment. Giving commentaries for television is not the same as giving ordinary commentaries, for the commentator has to talk much less, often allowing the picture to tell the story.

The average home television receiver has a screen measuring approximately 8 in. by $6\frac{1}{2}$ in., giving comfortable viewing for five or six people at a distance of about 5 feet. Reception quality largely depends on the distance of the receiver from the transmitter and the contour of the country. The very short radio waves needed for television tend to be deflected by hills. In ordinary undulating country, good reception from Alexandra Palace may be expected up to about 40 miles, and from the relay station at Sutton Coldfield up to about 50 miles. Many viewers, however, report satisfactory results at much greater distances.

See also BROADCASTING.
See also Vol. IV: VISION, TRANSMISSION OF.
See also Vol. VIII: TELEVISION.

TENNIS. This game, often called 'real tennis' to distinguish it from LAWN TENNIS (q.v.), is very old. The word itself probably comes from the French *tenez*, meaning 'take it' or 'play': several French terms are still used, such as *grille* meaning an unnetted opening at one end of the court, and *dedans*, a similar netted opening. Originally tennis was played out of doors; but in France by the 14th century a form of the game was being played in enclosed courts. Tennis was established in England by the end of the 14th century, and numerous references to it in literature from Chaucer onwards testify to its popularity. In Shakespeare's *Henry V* the King receives an insulting gift of tennis balls from the Dauphin of France.

Tennis has been called 'royal tennis' as it was a favourite game of several kings of England and France, among whom were Louis X of France,

who died from a chill after playing a game, Henry IV of England, and Henry VIII who built the court at Hampton Court Palace. After 1800 the popularity of the game declined, mainly because of the high cost of building a court; but it is still played to-day, especially at Hampton Court, Lord's, and Queen's Club. During the last 50 years tennis has also been played in America.

The diagram shows the shape of a tennis court. The dedans and corridor are covered by a sloping wooden roof, 7 ft. 2 in. from the floor, called the 'penthouse'. The net sags in the middle, being 5 feet high at the sides and 3 feet at the centre. The balls are solid and covered with cloth, and the racket is lop-sided, has a thick gut, and is gripped at the point of balance, part-way up the handle. The game may be played by two or four players. The service is always delivered from the same side of the net, and to be good the ball must touch the side penthouse beyond the net before dropping into the service court. The striker returns the service over the net either on the volley or first bounce. The score is counted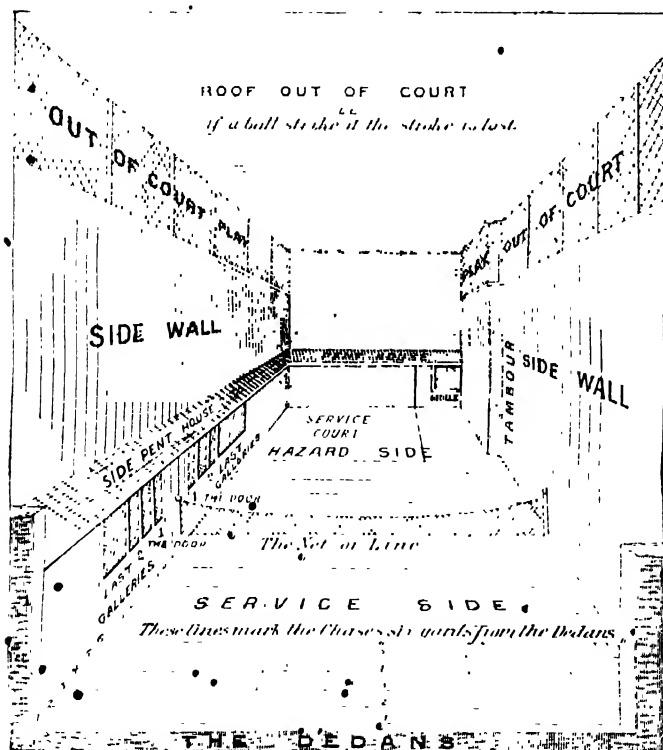 as in lawn tennis, and a set is won by the first player to win 6 games. A score is made when a player hits a ball into a winning hazard, such as the dedans, or the grille, or the last gallery on the hazard side; or when his opponent hits the ball into the net, out of court, or if he loses a chase. A chase occurs when the ball bounces twice on or between any of the lines marked across the court, or any of the galleries except the winning gallery. A chase results in loss of service. When two chases have been made, or if one of the players is within a stroke of game, the service changes hands and the players change sides. If the striker makes the ball bounce for the second time nearer to the back wall than his opponent has done, he wins the chase.

TENNIS, LAWN, see Lawn Tennis.

TERRIER, see Dogs, Breeds of, Section 4.

THEATRE, CHILDREN'S. This aims to provide its special audiences with plays which they will particularly enjoy, and also to develop in them an appreciation of good acting and production, so that they learn to discriminate between the good and the bad.

There have been many attempts to establish a theatrical company for this purpose in England. One began in Endell Street in London in the early 1930's, giving short plays, pantomimes, and dramatized poems. The actors were all taking part in plays at other theatres at night, and gave much of their time during the day to their young audiences. They were so much appreciated that they were able to move to the Little Theatre in John Street, Adelphi, and also had short seasons at other theatres. Other schemes would have developed had it not been for the Second World War. In 1944, however, the Glyndebourne Company presented *Great Expectations*, which went on tour to audiences of children in many parts of England. The next development was when the Old Vic Theatre Centre organized the Young Vic Company to represent the theatre for children. Their first production was a fairy-tale of magicians,

ROOF OUT OF COURT
If a ball strike it the stroke is lost.

OUT OF COURT PLAN

OUT OF COURT

SIDE WALL

SIDE WALL

SERVICE COURT
HAZARD SIDE

The Net or Line

S E R V I C E   S I D E

These lines mark the Chases. yards from the Dedans

THE DEDANS

A SCENE FROM 'THE SNOW QUEEN', PRODUCED BY THE
YOUNG VIC

In her search for Kay, Gerda meets the two ravens
John Luckers

transformations, and intrigue, called *The King Stag*. In 1949 a branch of the Young Vic Company began to travel to districts where no theatre existed, and to give a varied two-hour performance in any available hall. The programme began with selected scenes from Shakespeare, continued with a series of national songs and dances, and ended with Chekhov's one-act farce, *The Anniversary*.

Russia has developed the children's theatre very much further. A children's theatre is subsidized by the State in all provinces, and actors are specially trained for it. They present plays of all kinds, by no means designed only to instruct, and their repertoire ranges from Gogol and Dickens to Molière and Mark Twain. The movement was started about 1930, and there are now about fifty-two theatres for children. Czechoslovakia now has a flourishing children's theatre company, but not much has yet been done in other European countries, where, for the most part, children have to develop their dramatic taste on occasional pantomimes and the cinema.

See also FILMS, CHILDREN'S; THEATRE, HISTORY OF.

THEATRE, HISTORY OF. 1. GREEK AND ROMAN THEATRE. The word 'theatre' comes from the Greek and meant originally 'a place for seeing'. Places of spectacle are now known to have existed in Crete earlier than 2000 B.C. (*see* MINOAN CIVILIZATION, Vol. I); but it is from the later Greek theatres that the modern theatre has evolved. The Greeks were the first people to regard drama as a form of entertainment and to build a special place for its performance (*see* DRAMA, Vol. XII).

The typical Greek theatre was of horseshoe shape, unroofed, and built where the audience (sometimes 3,000 people) could watch from stone or marble seats, rising in tiers on a hill-side. In the centre of the horseshoe was a flat space, known as the 'orchestra' or 'dancing place' (*see* GREEK DANCING); and behind it a long, narrow platform which formed the stage, in early times probably built of wood and later of stone or marble. There were fixed stage buildings with columns and central and side doors. By a stage convention the central door was always used by those characters in the play who were on the spot, and the side doors by those characters who represented travellers, those coming from distant lands using the right-hand door and those from nearby using the left. The chorus filed through the side doors to their places in the orchestra. There they faced the stage during the action and only turned to the audience when speaking their commentary on the events of the play. Although the main setting was very simple, elaborate stage machinery was often used. A crane would let down from the heavens the god (*deus ex machina*) who could provide the last-minute solution of the conflict. Furies and ghosts came from underneath the stage, as from the underworld, by means of a trap-door. Good examples of Greek theatres survive at Athens, Epidaurus, and Oropos (*see* GREEK DRAMA, Vol. XII).

In Roman times the drama became more intimate, and walled theatres were built. The stage and sometimes the complete theatre was roofed, and the settings were generally more elaborate than those in the Greek theatre. The size of the orchestra diminished as the chorus became less important. Good examples of Roman theatres survive at Pompeii, Orange, and Aspendos.

2. MEDIEVAL THEATRE. When drama began to revive after the Dark Ages, the tradition of the classical theatre had perished. The early

Christian plays, which were part of the church worship, were originally performed in church; but by about the end of the 13th century the need for more space induced them to move out of doors—and, in consequence, to become less religious. This was the origin of the MIRACLE PLAYS (q.v. Vol. XII), which were first performed on the church steps or on a rough stage constructed in a courtyard, and later came to be financed and performed by craftsmen of the various trades guilds—and so were sometimes called guild plays. The performers moved round from town to town acting their plays on two-storied wagons called PAGEANTS (q.v.). In course of time groups of professional players began to appear, who toured the country and acted their MORALITY PLAYS (q.v. Vol. XII) in innyards, public or private halls, or wherever they could get space.

3. ELIZABETHAN THEATRE. In 1576 James Burbage, himself a joiner and also a player, built the first theatre in London—the Theatre at Shoreditch with which Shakespeare was connected. Others soon followed—the Curtain, the Blackfriars, the Rose, the Swan, and the Globe. The Elizabethan theatre in some ways resembled the courtyard from which it had developed. It was wooden and circular with a square stage projecting into the pit where the

THE ELIZABETHAN STAGE
From a contemporary drawing of the Swan Theatre

majority of the spectators stood. The pit was open to the sky, and only the stage and galleries were roofed. At the back of the stage was a small gallery which was used for such purposes as Juliet's balcony; under the gallery was a curtained opening for scenes set back from the main stage, such as Desdemona's bedroom or Juliet's tomb. Behind the stage were 'tiring' (or dressing) rooms. No time was lost in changing scenery, for the audience took changes of scene for granted as the action of the play moved from place to place. Indeed, the main stage had no front curtain. When an actor had to deliver a soliloquy, he would go downstage, so that he was surrounded by the audience on three sides and very close to the audience, some of whom sat upon stools on the stage itself. Some variety was given to the action by having in addition to the main stage an inner stage and a trap-door for ghosts. Of course, there was no artificial light so plays always had to be performed during daylight.

4. RENAISSANCE THEATRE. The continental theatre had a different ancestry. In 1486 a manuscript by a Roman architect, Vitruvius, giving details of classical Greek and Roman theatres, was discovered and published. In consequence many theatres of this type were built in Italy. They had permanent architectural settings or 'scenes', and in some cases the stage machinery of the Greeks and Romans was imitated and improved. There were thunder and lightning machines and, in the early 16th century, invisible wires and coloured lighting. The most famous theatre, at Vicenza, can still be seen. The Italians long retained their lead in stage design, and continued to influence theatres all over Europe until well into the 18th century. They specialized in painted backcloths with elaborate perspective vistas, giving an impression of great depth. In the 18th century Italian scenery designers travelled as far as Russia.

5. 17TH AND 18TH CENTURIES. From Italy the influence of the classical type of theatre spread slowly northwards. In France there was only one professional theatre in the 16th century. The Théâtre Français was founded in Paris in 1680, which, renamed in 1789 the Théâtre de la Comédie Française, is still the home of French classic drama.

The new continental ideas of stagecraft reached England by way of INIGO JONES (q.v. Vol. V), who visited Italy in the early years of
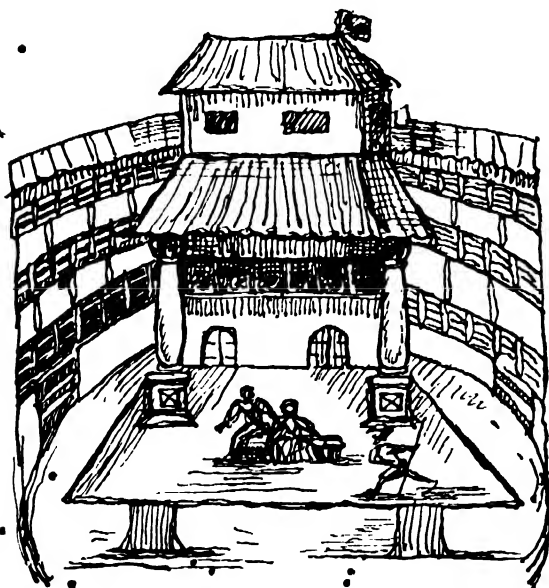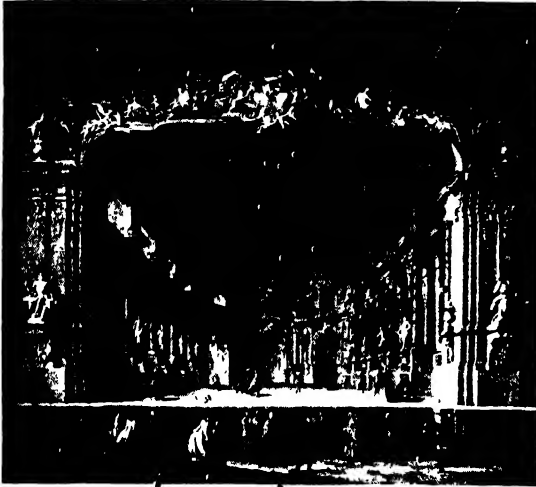
THE PIT AND STAGE OF A THEATRE IN THE EARLY 18TH CENTURY. From a painting after the school of Bibbiena. *Othello* is being played. *National Gallery*

the 17th century, and used Italian ideas in the settings he designed for the MASQUES (q.v.) which were a popular form of entertainment at court and in private halls at the time. For the first time in English stage history 'flats', or sections of painted cloth mounted on wooden struts, began to be used, with another Italian innovation, the 'proscenium arch', to frame the stage and separate it from the audience by means of the curtain. It was not till late in the 18th century, however, that dropping the curtain between acts became a regular practice.

After the restoration of the monarchy in 1660 public theatres were licensed, and playgoing again became an amusement for all classes, as it had been in Shakespeare's day. The two main centres of attraction were the Theatre Royal, Drury Lane, where the King's Players performed, and the Duke of York's Theatre at Salisbury Court. After the great fire in 1666 a new Theatre Royal was built to the design of Sir Christopher WREN (q.v. Vol. V), and here the two companies finally united in 1682. For lighting, the new theatre used oil lamps which could be partially dimmed or brightened; and footlights were introduced. Painted scenery and all possible mechanical devices were brought into use. The 'apron stage' still projected some way into the audience, extending an equal distance behind the proscenium arch for the main acting area. Set in the arch were doors, called 'tormentors', which were used as extra exits and entrances for

the actors (these can still be seen in some of the older theatres). Above were stage boxes, sometimes used by the audience, but serving also for the actors' use in balcony scenes. One very fine example of this type of theatre survives in the Theatre Royal, Bristol (*see* ARTS COUNCIL).

During the 18th century many new theatres with no great changes in design were built in the provinces. In 1732 the opening of Covent Garden with its much larger auditorium had some important effects on the stage. As the stage was so far away from the greater part of the audience, it became necessary to light it even more brightly and to have the lighting concealed. Lights from the wings were used, and these were screened with coloured silks to give more varied effects. The privileged seats on the stage itself, which had been allowed from Elizabethan times, were finally abolished; and the way became clear for much more skilled scenic illusion.

6. VICTORIAN THEATRE. In the first half of the 19th century there were few new developments in stagecraft, though some new stage devices were copied from the theatres of the Continent. In 1820 there was at Drury Lane a device, called a 'diorama', for making landscape appear to move across the back of the stage. Iron bars were fixed above the stage parallel with the proscenium opening to form the 'grid', which most theatres have to-day, so that scenery could be raised by pulleys for scene-changes. Scenery became more elaborate, and all kinds of realistic effects were attempted, great attention being paid to historical accuracy in all period productions. All this set grave problems for scene-shifters, and various kinds of sinking and sliding stages were tried out, mostly on the continent. Gas lighting (first introduced at the Lyceum Theatre, London, in 1803) was generally used, and could be easily controlled for increasing or dimming the light for stage and auditorium.

Since 1737 the establishment of all theatres had been under the strict control of the Crown, and Drury Lane, Covent Garden, and the Haymarket were the only theatres allowed to perform genuine plays. Other theatres, however, generally managed to evade this restriction; but it was not till 1843 that a new Theatres' Act finally removed it and placed all theatres equally under control of the Lord Chamberlain. This enabled many, which hitherto had been used only for the performance of melodrama for local

audiences, to gain a reputation for good productions. Among these were Sadler's Wells (founded in 1765), the Princess's in Oxford Street (1830), the Olympic (1806), the Lyceum (1809), the Adelphi (1806), St. James's (1835), the Strand (1830), and the Old Vic in the Waterloo Road (1818). About this time Covent Garden became devoted exclusively to OPERA (q.v.), and was renamed in 1847 The Royal Italian Opera House.

From about the 1860's onwards members of the Court and upper classes began to attend plays more frequently, and so the furnishing of the theatres was made more luxurious and comfortable. Upholstered seats were introduced in place of the old wooden benches; most of what had been the pit now became the stalls (first introduced at the Lyceum in 1828) which, apart from boxes, were the best seats in the theatre. Arrangements were made to enable the audience to book tickets in advance and so to avoid the rowdy struggles which used to develop round the box-office in the 18th century. The whole performance became more orderly and respectable: the behaviour of the audience improved, and actors and actresses were no longer drowned in abuse or pelted with orange peel, as happened not infrequently in Garrick's day (see ACTING, HISTORY OF). The apron stage disappeared and was replaced by the orchestra pit.

By 1900 the theatre had become substantially like that we know to-day. In 1892 electric light was being fitted into theatres, and this greatly reduced the risk of fire, which had twice gutted Covent Garden in the first half of the 19th century and was always a serious danger where the only lighting came from candles or oil lamps.

A SCENE FROM 'THE LADY'S NOT FOR BURNING', BY CHRISTOPHER FRY
The play was produced by John Gielgud and Esmé Percy in 1949. The setting was designed by Oliver Messel
Angus McBean

7. MODERN THEATRE. There have been a number of recent developments in stage design. In the last century designers worked to make the set as realistic as possible, and with this end in view introduced the box set, so-called because it represented the three walls of a room with the proscenium opening as the fourth (*see* STAGE DESIGN). During the 80's there was a revolt from such realism, known as the 'Free' or Independent Theatre movement, formed to fight for more imaginative productions and settings more expressive of the ideas of the play. Stanislavsky at the Moscow Art Theatre was its pioneer; its chief exponent in England was the producer Gordon Craig. Simple, bold, architectural scenery enhanced by striking lighting effects was the characteristic of his work, and his influence has been considerable. In Russia the movement went further and led to geometrical 'Cubist' and 'Constructivist' sets, built up with ladders and platforms to give several acting levels; this example was developed further in Germany and America. Also in Russia, Meyerhold tried to break down the division between actors and audience by reintroducing the apron stage; in England William Poel did the same in his Shakespeare productions, which led to the construction of such a stage in the Maddermarket Theatre at Norwich. Generally, however, England has shown itself much more conservative in stage and theatre design than most European countries or the U.S.A. Apart from the Shakespeare Memorial Theatre at Stratford-on-Avon, few theatres have been built in recent years; and the experiments in Germany and the U.S.A. to abolish the proscenium arch and return to the Greek type of theatre have not been followed.

See also ACTING, HISTORY OF; STAGE DESIGN.
See also Vol. XII: DRAMA.

TIGHT-ROPE WALKING, *see* ACROBATS.

TILTING, *see* TOURNAMENTS; QUINTAIN.

TIMPANUM, *see* PERCUSSION INSTRUMENTS.

A SCENE FROM 'THE DEATH OF TARELKEN' BY SOUKMOVO-KOBYLON
The constructivist set represents a prison cell. *S.C.R.*

TOBOGGANING. For centuries the Swiss have used their wooden toboggans for practical purposes (*see* SNOW AND ICE TRAVEL, Vol. IV); but it was not until the British came to Davos that tobogganing was organized as a sport. In 1883 John Addington Symonds, the famous Victorian man of letters, founded the Davos Tobogganing Club, and members of this club challenged all comers to an international race. Davos was a resort for consumptives, and people curing from this disease thus played a great part in the development of tobogganing as a sport.

The first races were run on wooden toboggans on which the competitors sat, and so long as these primitive Swiss coasters were the only toboggans on the course, the consumptive patient could hold his own; but gradually the wooden 'luges', as they are called on the Continent, gave place to the modern skeleton toboggan with spring steel runners, on which the competitor rides, lying down flat, head first. The first of these new toboggans was introduced to Davos by an American called Child who won every race for which he entered. The consumptive might protest strongly against this modern toboggan which made it impossible for any but the strongest to win races, but the new toboggan had come to stay.

The most famous toboggan run in the world is the Cresta ice-run at St. Moritz. This was staked out in 1884, largely owing to the initiative of an Englishman, W. H. Bulpett, founder of the

A SWISS TWO-MAN BOB-SLEIGH IN THE OLYMPIC WINTER SPORTS AT ST. MORITZ, 1948. *The Times*

Cresta Club. The run is 1,320 yards in length, and speeds up to 80 miles an hour are obtained on it. Cresta racing is an exacting sport, and makes severe demands on nerves, skill, balance, and technique. Races are won or lost by fractions of a second. A good start is of essential importance. The racer throws himself on to his toboggan, and unless his push-off is dead straight, and unless he lands on his toboggan at the right place, he will inevitably lose a vital second or two. It is extremely difficult to take corners at the right point and to ride a steep bank without skidding, and mistakes at such points always lose valuable seconds.

The Cresta is open in sections. The lowest part from Stream Corner is the first to be opened, in December; the middle section from the junction is open in January, but the complete course is not open before February. The cups and trophies presented by Addington Symonds are now no longer competed for; but the great prestige of the Cresta run is undiminished, and tobogganing attracts more attention at St. Moritz than elsewhere.

'Bobbing', which dates from about 1890, is performed on special toboggans or 'bobs' which usually carry four persons. They have wheel steering. As bob runs are extremely expensive to build and to maintain, and as the competition of ski-ing has had a disastrous effect on bobbing as on other sports, few Alpine centres still maintain bob runs.

TOC H. In 1916, during the First World War, a soldiers' club for rest and recreation was opened in the Flemish town of Poperinghe, then the first habitable town west of Ypres. It was in charge of the Rev. P. B. Clayton, known to all as 'Tubby Clayton'. The club was called Talbot House, which was soon shortened to T. H. or, in signaller's language, 'Toc H'. The 'upper room' of the house was a chapel, with a carpenter's bench to serve as an altar. After the war men who had enjoyed going to Talbot House with its friendly atmosphere wanted something to take its place in civilian life, and so they determined to revive it. Their first meeting was held in London, in November, 1919. Without any funds, publicity, or a name known to the public, the movement was born. By 1920 the first replica of Talbot House (called Mark 1) had been opened, and was occupied by an unusual mixture of men. At the same time, up and down the country, men began forming themselves into branches of Toc H, and arranging regular weekly meetings. In offices and workshops men heard of the new Toc H and were caught by its vitality and eagerness. In 1922 the movement was incorporated by Royal Charter, with H.R.H. the Prince of Wales as its first patron.

In 1922 the Lamp of Maintenance was adopted as the symbol of Toc H. This is modelled on the shape of a 1st-century Christian lamp, and bears the double cross, taken from the arms of the city of Ypres. A bronze Lamp of Maintenance is given to every branch as soon as it is recognized as a unit of Toc H. The ceremony of 'Light' is held at every unit meeting: when the Lamp of Maintenance is lit in a darkened room, the members call to mind the Elder Brethren, both those who died in war, and those others who, down the years, have shown a spirit of unselfishness and sacrifice; and they pledge themselves to maintain that heritage in their own lives.

A Women's Section of Toc H (known at first as the Toc H League of Women Helpers) was formed in 1922 under the patronage of the Queen, and to-day there are many branches in this country and overseas.

The local Toc H branch normally holds
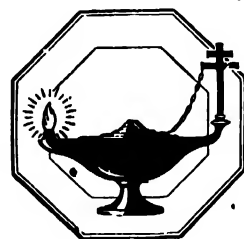
weekly meetings, which are open to non-members as well as members. The fellowship is thus maintained and extended to others. Toc H sets out to provide man-power for spare-time voluntary work wherever it is needed. Every man is pledged to undertake some form of voluntary service in his leisure, such as hospital visiting, the care of the blind and deaf and dumb, friendship to the lonely or prisoners, work among boys in Clubs, Scout troops, or Brigades. The service of the members to their neighbours is organized by the 'jobmaster'. The movement also works through schools, putting before schoolboys the ideal of voluntary social service. A special form of work is in the leper settlements in Africa, where Toc H volunteers are giving full-time service under the British Empire Leprosy Relief Association.

See also CLUBS, BOYS' AND GIRLS'.

TOPS, *see* STREET GAMES.

TOTALIZATOR, *see* BETTING.

TOURIST TROPHY RACES, *see* MOTOR-CYCLE RACING.

TOURNAMENTS. The tournaments and jousts of the days of chivalry in the Middle Ages were military displays in which mounted knights in full armour engaged in mock battle, 'tilting' or charging at each other with blunted lances. The word 'Joust' is sometimes used as an alternative term for tournament; but according to some authorities a joust was a contest in which knights met in single combat, while at a tournament they charged each other in troops. Both kinds were popular in the Middle Ages.

Tournaments are first heard of in the early 12th century in France, from where they spread rapidly to Germany, England, and the rest of Europe. At first they were not properly organized, but were a kind of mêlée in which knights fought in groups, the object being to disable as many opponents as possible for the sake of gaining the victim's horse, arms, and a ransom. The method of fighting in these early tournaments was to hold off until the adversary was tired and then join in a general attack against him. As time went on, however, tournaments developed into orderly contests, staged with most elaborate pageantry, and with strict rules of conduct. They reached their height in

TILTING IN THE 15TH CENTURY
From a French illuminated MS., Brit. Mus. MS., Cotton MS. Nero X

the 14th and 15th centuries. In those days skill in the use of weapons was an essential part of a young nobleman's education, and his reputation depended largely upon his courage and sense of honour in the field. These displays, therefore, gave the knights an opportunity to practise the art of war, and win honour for themselves, as well as providing an exciting spectacle for the onlookers. They were usually held at the invitation of a king or prince, and were open only to knights of noble birth and high reputation. The knights were fully armed and splendidly dressed, wearing a surcoat of silk or linen over the armour, embroidered with their coat of arms. Usually each knight displayed prominently on his armour the 'favour'—a sleeve, perhaps, or glove —of some lady. He was attended by a squire or page who carried his spear and helmet until he needed them. Each knight was announced by the herald before he entered the 'lists', and rode between the palisades surrounding the arena or tilt-yard. Tilting took place over a barricade, which prevented the horses from colliding. The usual weapons were blunted lances or swords, and the object of the fight was to unhorse or unseat the opponent or break the spear by a good clear blow on his shield or helmet. A score was kept on a system of points, and any competitor who struck a foul blow or hit his opponent's horse was disqualified. The ceremony was watched by crowds on the tilting-ground, and by lords and ladies from the pavilion. At the end a prize was presented to the winner by some lady chosen as the queen of the tournament. A good description of a

medieval tournament is to be found in *Ivanhoe* by Sir Walter Scott. The most celebrated English tournaments were held in the tilt-yard near St. James's at Smithfield in London.

As the pageantry increased, tournaments changed somewhat in character; and by the 16th century they sometimes took the form of a pageant, equivalent to a modern MILITARY TATTOO (q.v.), an elaborate performance, perhaps giving a dramatic representation of a military action such as the defence of a pass or the assault of a fortress. In 1559 Henry II of France was killed in a tournament by a lance which pierced his eye, and this, and the development of fire-arms, caused tournaments to fall into disfavour. One of the last took place at The Hague in 1663, at which Prince Rupert distinguished himself.

See also Vol. IV: HERALDRY

TOWNSWOMEN'S GUILDS, *see* WOMEN'S INSTITUTES.

TOXOPHILY, *see* ARCHERY.

TOYS, HISTORY OF. Very little is known about the toys of our own early ancestors, for toys, usually being fragile, do not generally survive from one generation to another. The toys of primitive peoples were probably rattles, balls, dolls, and miniature animals—in fact much the same as those with which children play to-day. We know more, however, about the toys used by the ancient Egyptians, Greeks, and Romans.

Egyptian children, about 2000 B.C., played with jointed wooden figures that could be made to perform actions by pulling strings. There are

GREEK AND ROMAN TOYS
Clay dolls, rag dolls, kindergarten mat, whistle, and doll's tray. *Brit. Mus.*

several such dolls in the British Museum. Greek vases show children and grown-ups playing ball-games, and wearing hideous masks like those that used to be seen on Guy Fawkes' Day. Aristotle, the Greek philosopher, mentions toys which were moved automatically by falling sand or mercury, rather like the toy acrobats and dancing figures of Victorian days. The Greeks also had hoops (though they were used by adults and not, so far as we know, by children), hobby-horses, forerunners of the rocking-horse, and soldiers, which were kept in wooden horses like that used to capture Troy. In Roman times there were many kinds of toys. Horace the poet compares human beings to wooden toys controlled by strings—rather like our wooden PUPPETS (q.v.); and among Roman relics found in Britain are dolls' furniture, an occasional tin soldier, a picture of string-moved figures, and primitive dolls, some of clay, others of wire and rag.

We know little of the toys used in the Middle Ages, our information being based on a few pictures and references in literature, and on the very few toys which have actually survived. Among these are primitive clay-dolls and toy horses and knights of the 12th and 13th centuries. In the Cluny Museum in Paris there is a knight on horseback, only $2\frac{3}{4}$ inches high—the ancestor of our toy soldiers. We know also that tops and rattles were played with in the Middle Ages; and a 14th-century manuscript records a payment made to a goldsmith for repairing the toy windmill of Princess Isobel of France. There were doll-makers in Nuremberg before 1500, and in the Jena Museum there are some parts of a 15th-century dolls' house.

We have more information about 16th-century toys. The French writer Rabelais, describing the childhood of Gargantua, writes of toy windmills, and of a stable of wooden horses on which Gargantua rode there is no clue as to whether these were on wheels or rockers, but they certainly moved. Pictures show children of this time playing with skittles, bat and ball, cup and ball, shuttlecock, kites, hoops, whip-tops, drums, stilts, air-balloons, skipping-ropes, and, of course, dolls and dolls' houses. Surviving examples of metal soldiers in the form of knights in armour, brass cannons, and a wide range of dolls made of pulp, wood, clay, wax, and other materials are fairly common. Craftsmen who made full-size furnishings and equipment for use in the household were not above turning out

A GAME OF WHIP AND TOP
From Kate Greenaway's *Book of Games*, 1889

miniature examples for dolls' houses, some of them exquisitely fashioned in fine wood or precious metals. One young prince was given a complete set of huntsmen and hounds, together with animals to hunt, all of them in miniature, while his sister had a completely furnished dolls' kitchen and a miniature poultry-yard. The French word for toy, *jouet*, is first found in 1523 in a list of the possessions of Marguerite of Austria.

In the 17th century the children of the rich had magnificent toys. One of the French princesses was given a doll and a dolls' house, completely furnished, costing a fabulous sum. In 1631 a pamphlet was printed to describe the wonderful dolls' house on show in Nuremberg, and beautiful specimens completely furnished by fine craftsmen of this period may be seen in museums in England and on the Continent. Some of the dolls' houses of the 18th century are almost unbelievably elaborate— there are a few good examples in the Victoria and Albert Museum. But the Dutch dolls' houses are the best: there is one, for example, at the Gemeente Museum at The Hague which must have cost a fortune to decorate. In the Central Museum at Utrecht is another almost as fine. Elaborate dolls, also, were made in this period, some of them having the loveliest changes of costume. Whole armies of tin soldiers, sets of animals, and figures for farmyards and zoos, religious processions, shops with all kinds of wares for sale, forts, stables, horses, sometimes drawing carts— in fact most of the toys now familiar to the nursery were common in the 18th century. There appeared at this period cut-out sheets and books hardly different from those still popular to-day;

and from these developed the miniature theatres, with complete scenery and sets of characters, sold with the word-book of the play, and known as 'penny plain and twopence coloured' (*see* TOY THEATRES).

Automatic toys were known earlier, but they had not become really practical nor were sold in shops until about the 18th century. Some of them were moved by clockwork, but there were also plenty of 'jumping jacks' and other toys that moved by means of strings or by being drawn along the floor. The magic lantern also became a popular toy about this time. The first jig-saw puzzles consisted only of ordinary maps mounted on wood and cut into a number of eccentrically shaped pieces, but these later became much more elaborate and attractive (*see* PUZZLES). The grimmest of all 18th-century toys were the miniature guillotines sold during the French Revolution, with which children could copy their parents and cut off the heads of aristocratic dolls. In this century until 1914 Germany was the leading producer of toys.

During the 19th century, as a result of the scientific progress of the time, the toys invented in the 18th century became really cheap and plentiful. Many new scientific toys were invented, and also fantastic scientific-sounding names were given to many others. Toys in which figures appeared to move by whirling strips of paper were called 'thaumatropes', 'phenakistoscopes', 'praxinoscopes', and 'zoetropes'. At the Great Exhibition of 1851, manufacturers called their mechanical toys 'philosophical apparatus' (for at this time Science was called 'natural philosophy'); and all toys and children's books were supposed to 'improve' as well as entertain. A pea-shooter was supposed to demonstrate to children the elasticity of gases; slings, hoops, and tops showed the property of centrifugal force; and tops were also lessons in 'physiological optics'. Faraday, the great scientist, said that 'boys' toys are the most philosophical things in the world'— and he invented several to prove his point.

It now became possible to produce clockwork toys for a few pence. Cheap labour in Austria and south Germany flooded the market with inexpensive wooden toys. Fully dressed French dolls made of composition were offered at the Great Exhibition for 8*d*. a dozen, or, unclothed, for 2½*d*. a dozen. Finally, the use of indiarubber opened up enormous possibilities in toys, as well as in other fields.

As well as all these cheap toys there were extremely elaborate and expensive toys. From Paris came trees with groups of tiny birds that could not only sing, but also fly most naturally from twig to twig. Even in those days these cost from £10 to £20 a set. The Swiss turned their genius for clock making to the production of marvellous mechanical figures, capable of the most complicated movements, though for some unknown reason always grotesque in form. There were elaborate railway trains, lifelike dolls able to make sounds, open and shut their eyes, boxes containing complete stag-hunts, farmhouses, or market scenes, some of them containing one hundred or more metal parts. There were mills, cascades, fountains, and pumps worked by real water, and mysterious figures moved by falling sand. The mechanical group made by Fleischmann of Sonnenberg showed Gulliver's capture by the Lilliputians, in which every feature of the incident was faithfully carried out by the tiny figures. These elaborate mechanical groups were often to be found on Victorian railway stations in slot machines, where they performed for a penny.

In this century, up to the beginning of the Second World War, many of the cheap and ingenious toys which flooded the markets came from Japan.

Modern toys are designed with a more scientific understanding of the needs of the young child than were many of the elaborate contraptions of the 19th century. The modern nursery is equipped with the kind of toys which will give the child outlet for his various instinctive impulses, and help him to develop his growing capacities. He has big pushing and pulling toys, toys which provide him with the material for constructing things, toys with which he can enrich his imaginative phantasy play, and toys with which he can play out all his experiences of everyday life. Such toys have not as a rule the artistic charm and attraction for the adult of the earlier toys; but they do perhaps more satisfactorily fulfil for the young child the function of toys.

See also MODEL AIRCRAFT; MODEL RAILWAYS; MODEL SHIPS.

See also Vol. XI: TOYS.

TOY THEATRE. This was one of the most popular toys of the early 19th century, and English toy-theatre makers were famous at the time. They made well-equipped little stages of

wood and cardboard, and sold sheets of characters and scenery at 'a penny plain and twopence coloured' to be cut out by hand. Sheets of characters taken from a play at a London theatre were first published about 1811, though these were probably intended as souvenirs of the performance rather than as toys. To colour these characters, cut them out, and make them stand by mounting them on stiff cardboard became, however, a very popular amusement soon after the first sheets were published. Sheets of scenery, theatre fronts, and words soon accompanied the characters, and these were clearly intended for performance on a toy stage. All the plays were taken from actual full-size productions. At first two or three sheets of characters and a few scenes would make up a complete toy-theatre play; but they gradually became more elaborate until twenty or thirty sheets would be needed. The longest ever published had sixty-four sheets and full stage directions. In these elaborate versions the same characters were drawn in a number of different attitudes to enable the production to be as complete as possible. Fairies, soldiers, pirates, and all the actors in comedy, tragedy, opera, pantomime, or melodrama could be bought, and then cut out and mounted.

At first the stages were home-made, but by
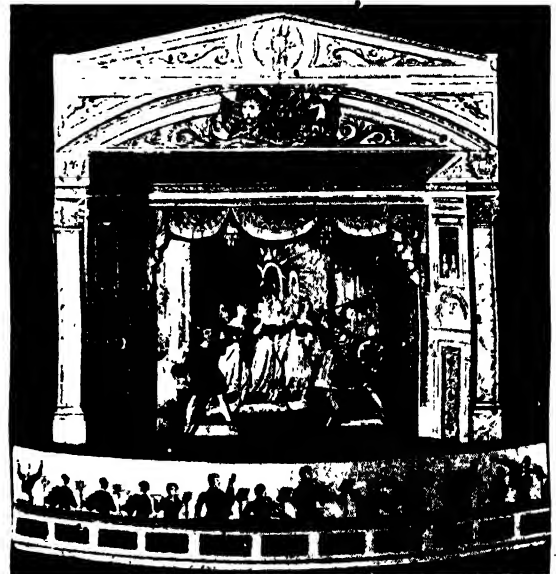
A SCENE FROM 'THE SILVER PALACE', A FAMOUS TOY THEATRE PLAY

*Pollock's Regency Theatre. Morgan-Wells*

1829 they could also be bought. The curtains, wings, backcloth, and footlights were usually bought separately and fitted up at home. The difficulty was to make the characters move satisfactorily on the stage. At first they were stuck in wooden slides that fitted into grooves cut in the floor of the stage, and were pulled from one side to the other. This made the figures stand very naturally, but confined them to three or four strips of the stage parallel to the footlights. Later, the figures were set in tin stands, to which long wires were attached, which could be worked from the wings or from under the backcloth. The simpler stages were lighted by candles concealed in the wings, but more elaborate ones could be fitted with little tin footlights for oil-burning wicks. Toy Theatre shops also sold special firepans, in which various chemicals could be burnt to give coloured lighting. This was specially popular as a grand climax.

When all was assembled, the drawing-room audience could see enacted the dramatic stories of *The Corsican Brothers* or *The Brigand*, and the splendours of *The Sleeping Beauty* and *Jack the Giant Killer*; and, if the children speaking the parts for their cardboard actors could also sing, they might hear gay little operas such as *The Waterman*.

In the later years of the 19th century, as the process of making the sheets by copper engraving and hand-colouring became more expensive, most of the toy-theatre makers, except Benjamin Pollock of Hoxton, London, went out of business. After his death in 1937 his daughter continued to make the toy theatres; but, when the home of the Pollock theatre was damaged by a bomb in 1943, toy theatres seemed likely to die out. However, a group of enthusiasts are reviving them, and the old repertoire of plays is being reissued, with new plays and modern equipment added. The modern theatres have more elaborate scenery made of wood or plastic, together with electric lighting.

See also Toys; Puppets.

TRACKING GAMES. Nomadic tribes, such as the Red Indians, not only hunt animals and trail their enemies by following signs—footprints, trodden-down grass, or broken twigs—but they also deliberately leave trails behind them to be followed by other members of their own tribe. Most of our tracking games are based on this idea. The trail should consist of an altera-
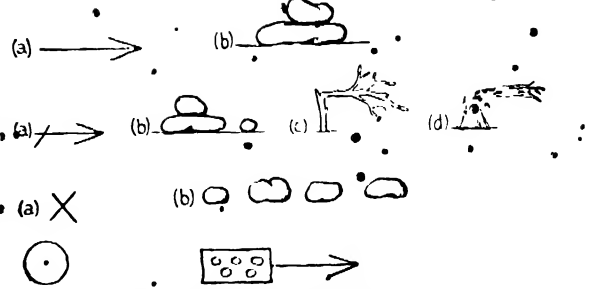
SOME RED-INDIAN TRACKING SIGNS

Top row (*a* and *b*): Go straight on; Second row (*a*, *b*, *c*, and *d*): Turn right; Third row (*a* and *b*): Do not follow this road; Bottom row: I have gone home. Letter five paces to the right

tion to the landscape, so slight that it can be detected only by someone who knows exactly what to look for.

Tracking by Red Indian signs is taught to BOY SCOUTS and GIRL GUIDES (qq.v.) as training in observation and woodcraft. One person goes ahead and lays the trail, which may lead to a new base or back home again. The others then follow, the last person removing the signs as he goes. These are always fairly small and should be placed at regular intervals, being slightly more conspicuous at the start of the trail and at unexpected turnings. The diagram shows some of the conventional signs, which are scratched on the ground or made with twigs and stones. Sometimes the trail is 'blazed', in the manner of pioneers in timbered country—the trees along the route being cut to expose the white wood. Alternatively, a split twig may be placed in the bark at regular intervals, or a matchstick stuck through a leaf. A more simple trail can be laid with sawdust, dropped every 50 yards or so, or with bits of coloured wool tied to the bushes. The principle is always to put down something which would not normally be there, but which is fairly inconspicuous.

The paper-chase is the simplest tracking game. The game of Hare and Hounds, which arose from the old-established English sport of hunting hares on foot with beagle packs, and became popular during the 19th century, is a paper-chase. The 'hares', a group of picked runners, are given several minutes' start, and leave a 'scent' of torn-up paper for the rest of the party, the hounds, to follow. A good hare uses cunning as much as speed, since he can often shake off the pursuing hounds by laying false scents and

doubling in his tracks. A paper-chase was once a popular game with children; but chalk-chases, in which chalk signs are used for laying the trail, are now more often played.

The Treasure Hunt is a rather different kind of tracking game, and can be played either indoors or outside. The treasure is hidden, and 'clues', in the form of Puzzles written on small pieces of paper, are laid at intervals as a trail. One clue leads to the next, until the final clue leads to the treasure. Large-scale treasure hunts, often with valuable prizes, are sometimes staged, in which the seekers chase all over the countryside in cars.

See also PARTY GAMES.

TRADITIONAL SPORTS AND CUSTOMS.

Old customs associated with a particular season or day of the year, which have come down to us from past ages, are to be found in most countries. Sometimes these are national or even, as many Christmas customs, international; but often they are associated with a particular place, community, or profession. In many cases their origins are quite obscure, and, as with many FOLK DANCES, SINGING GAMES, and STREET GAMES (qq.v.), they can be traced back to some ancient pre-Christian religious idea or superstition which gave rise to a RITUAL (q.v. Vol. I). With the coming of Christianity, the pagan rites, instead of being discontinued, were given a new dress and name. The many sports and carnivals held on Shrove Tuesday, the day

CHAIRING THE WINNERS OF THE DUNMOW FLITCH AT DUN-MOW, ESSEX. From Brand's *Popular Antiquities*, 1813

before the beginning of the Lent fast, originated in pagan fertility rites connected with the season of spring and the sowing of the seed.

From very ancient days the scouring of the White Horse at Uffington (*see* Vol. I, p. 150), which took place about every 14 years, was the occasion for local sports. These included bouts of QUARTER-STAFF (q.v.), races by cart-horses and asses, and a special race run for a large round cheese pushed over the brow of a hill. These sports as they were still being played in the 19th century are described in *Tom Brown's Schooldays*. Similar sports are still held every summer at Grasmere in Cumberland, where the special features are races up and down Butter Crag by the mountain guides, and wrestling matches in Cumberland style (*see* WRESTLING).

A local custom of a different kind, the contest for the 'Dunmow Flitch', took place on Whit Monday at Great Dunmow in Essex. A flitch (or side) of bacon was awarded to 'whatever married couple will go to the priory and, kneeling on two sharp-pointed stones, will swear that they have not quarrelled nor repented of their marriage within a year and a day after its celebration'. The prize was offered by Robert Fitzwalter in 1244 (though its origin may have been earlier). The first award is recorded 200 years later, in 1445. It was awarded only six times between then and 1855, since when it has been won more often. To-day the trial is held before a jury of six spinsters and six bachelors, and is a parody of Divorce Court proceedings.

Almost every festival in the calendar has customs associated with it. The New Year is the big festival of the year in many continental countries and in Scotland, where it is called Hogmanay. It is considered lucky for a dark man, preferably a stranger, to 'first-foot', that is, to be the first person to cross the threshold after midnight on New Year's Eve. Generally he brings with him gifts of bread, coal or wood, and money, or sometimes he carries a branch and a sprig of mistletoe. He is usually entertained with cake and wine, and kisses the hostess and her family as he wishes them a happy New Year.

The custom of sending valentines to members of the opposite sex on February 14th has, in fact, little connexion with St. Valentine. It is believed to go back to the Lupercalia of ancient Rome— part of its ritual being the drawing of lots to find out the name of the marriage partner. St. Valen-

tine's Day was believed to be the day when the birds chose their mates. At one time a lady's valentine (the first man she met on rising in the morning) was traditionally privileged to buy her a present. Valentines as we know them first appeared in the 18th century, and were cards with drawings and verses made by the sender. In the 19th century, shop-made valentines appeared, and became increasingly elaborately adorned with lace, real flowers, feathers, and moss. Valentine-sending has now declined, though it does revive from time to time.

Of the many ancient Shrove Tuesday customs in Britain, the best-known remaining one is the pancake scramble at Westminster School. A huge pancake is made, for which the boys scramble, the one securing the largest piece being presented with a guinea. In some places, especially in the North Midlands, local forms of football and handball, as well as a TUG-OF-WAR (q.v.), still take place on that day. CARNIVALS (q.v.), both on the Continent and at New Orleans in America, have kept many traditional customs alive.

England is now one of the few European countries which keeps up the ancient custom of Royal Maundy gifts. Purses of money are given in Westminster Abbey on Maundy Thursday to as many poor people of London as there are years in the reigning king's age. This is a ceremony in commemoration of the washing of the Apostles' feet by Our Lord. Until 1689 the reigning king always used to come in person and wash the feet of the poor people before the distribution, but now money is given by proxy by the Archbishop of Canterbury who is the Lord High Almoner. Special Maundy money is minted for the occasion—silver pennies, twopenny, threepenny, and fourpenny pieces amounting to one penny for each year of the king's age. These coins are still legal tender.

There is a country belief that the hot cross buns, customary fare on Good Friday, never go mouldy and can be kept and used for medicinal purposes. The Easter egg, with its spherical shape and the new life which it holds, is a symbol of the resurrection. Easter eggs, originally called 'pace eggs', were known as early as the 13th century. They were ordinary hard-boiled eggs, with the shells dyed different colours. These are still seen nowadays, and are sometimes ornamented with a design engraved on them with a steel point.

The origin of playing practical jokes before 12 o'clock noon, on April 1st is unknown. The custom of April fools, however, is very widespread. In Hindustan similar tricks are played at the Huli Festival on March 31st. In France an April fool is called a *poisson d'avril* (April fish), and in Scotland a 'gowk' (cuckoo).

The great spring festival of May Day is still celebrated in most continental countries, and many of its customs are still kept up in England. The custom of 'maying'—going out into the woods before dawn to collect flowers and branches—is not kept up much to-day; but maypoles are still to be seen (*see* FOLK DANCING), and the election of a May Queen still takes place in parts of England. In Oxford May Day is traditionally celebrated by the singing of a hymn to the sun from the top of Magdalen College tower. This may have started as part of a requiem mass for Henry VII, which was once said on the tower; but the custom appears to be older than this.

Hallowe'en, October 31, the eve of All Saints' Day, is traditionally associated with spirits and the dead, and is believed to be a time when the future, especially about marriage, may be revealed. According to tradition, an unmarried girl should stand before a mirror at midnight with an apple and candle in her hand, when she will see the ghost of her future husband looking at her in the mirror. The traditional Hallowe'en games such as bob-apple are still played; the apples are floated in a pail of water, and the players with hands tied behind them try to bite them as they bob about. Hallowe'en lanterns are also still made—a candle is set inside a turnip or mangold cut out into intricate patterns or sometimes into the shape of a grinning face.

Christmas, with its family gatherings, giving of presents, and decorating of the house with evergreens, is the greatest English festival. The hanging-up of mistletoe is exclusively English, though it is thought to have originated in Scandinavia where the mistletoe used to be treated as a sacred plant, and was the emblem of peace under which enemies were reconciled.

There are several customs associated with the sea, such as 'crossing the line' (*see* PLEASURE CRUISES), and the christening ceremony of a new ship, in which a bottle of champagne is broken over the bows of the ship when she is launched. This is of pagan origin, going back to the time when every ship was equipped with an altar; and it was the custom among the Romans,

Greeks, and Vikings to pour oil and wine over the altar at the start of a voyage, as an offering to the sea-gods.

See also CARNIVALS; FOLK DANCING; HOLIDAYS; SINGING GAMES; STREET GAMES.

See also Vol. I: FATHER CHRISTMAS; FESTIVALS; RITUAL.

TRAPEZE, *see* ACROBATS.

TREASURE HUNT, *see* TRACKING GAMES.

TRICK CYCLISTS, *see* ACROBATS.

TROMBONE, *see* BRASS INSTRUMENTS.

TROTTING RACES. The trotter might be considered the national horse of America. There are other strains of trotting-horses, such as the Norfolk trotters of England, and the Orloff trotters of Russia. But in England trotting races have now practically died out. In America, however, their popularity is at least as great as that of flat-racing and steeplechasing, and it can justifiably be claimed that the modern trotting-horse is exclusively the result of American breeding and development. Oddly enough, American trotting-bloodstock traces its origin back to an English thoroughbred horse called Messenger,

A TROTTING RACE ON THE GOOD TIME TRACK AT GOSHEN, NEW YORK. *New York Times*

which was sent to America in 1788; but the established trotter of to-day is almost always a native-bred American product, all the more valuable if it can show descent from Messenger.

Trotting races are run on oval-shaped earth tracks, the circuit measuring half a mile or a mile. Originally the driver sat on a comparatively heavy, high-wheeled vehicle known as a 'sulky'. In 1892, however, bicycle sulkies with pneumatic tyres were introduced, and as a result, the speed of trotters increased appreciably, the difference over a mile being as much as 5 seconds. The bicycle sulky, which weighs only about 25 lb., is not only considerably lighter than its predecessor, but is much easier to handle on the sharp bends of a trotting circuit. The races are run in heats. Horses which fail to win one of five heats are eliminated; and of the horses left the first to win three heats is the winner.

The first established record (1845) for one mile with the old high-wheeled sulky was 2 min. 29½ sec.; but with improvement in breeding, and the introduction of the bicycle sulky, the mile record was gradually reduced, until in 1903 the first 'two-minute mile' was achieved by a trotter which covered the distance in 1 min. 58½ sec. The existing record for a mile stands at 1 min. 55¼ sec. established in 1938.

Pacing races are also run in America. The 'pace' is a different gait from the 'trot'. In the trot, the left fore-foot and right hind-foot strike the ground together, and similarly the right fore-foot and left hind-foot. In the pace, the two feet on one side move together and then the two feet of the other side. Pacing is naturally the faster gait but less practical.

TROUBADOURS, *see* Vol. XII: SONG, HISTORY OF.

TRUMPET, *see* BRASS INSTRUMENTS.

TUBA, *see* BRASS INSTRUMENTS.

TUG-OF-WAR. This is a pulling contest between two teams, each team holding one end of a rope and trying to pull the other over a line marked between them. The origin of this type of contest is ancient: it is thought to be a relic of an old fertility rite in which men struggled for the straw rope, the mark of the corn divinity, or for the last sheaf of corn cut at the harvest. This struggle often took place between rival villages, the people believing that the side securing

A TUG-OF-WAR BETWEEN THE 8TH BATT. OF THE R.E.M.E.'S AND THE H DIVISION OF THE METROPOLITAN POLICE FORCE
At the A.A.A. Athletic Meeting at the White City Stadium, London, 1945. *Sport and General*

the straw rope or the sheaf would have the best crops. A tug-of-war is a feature in several children's SINGING GAMES (q v.), such as Nuts in May, where it is thought to be a survival of an old fertility rite connected with the choosing of a wife.

The tug-of-war is now a familiar sporting event at athletic meetings. There should be eight competitors on each side, pulling a rope not less than 4 inches in circumference, nor shorter than 35 feet. There are three tapes on the rope, one in the middle, and one 6 feet on each side of the middle; and there are corresponding marks on the ground. The pull starts with the centre of the taut rope over the centre mark on the ground. A pull is won when the 6-foot tape of the loosing side passes over the 6-foot ground mark on the winning side, or when any part of an opponent's foot touches it. All competitions are decided by the best of three pulls. Boys, unless properly trained, may strain themselves seriously at tug-of-war; and for this reason boys under 17 are not allowed by the rules of the Amateur Athletic Association to take part in open tug-of-war contests.

See also ATHLETICS.

TUMBLERS, *see* ACROBATS.

TUSSAUD'S, MADAME, *see* WAXWORKS.

UKULELE, *see* LUTES AND GUITARS.

U.S.A. FRATERNITIES. There is nothing in English university life quite like the student fraternities which are found in all important American colleges and universities. These student clubs provide housing and meals for their members and for the most part aim at creating a sense of social exclusiveness. The ceremony of 'rushing', or selecting new members from among the freshmen at universities, is carried out with great care. Some fraternities are considered smarter than others; but, for the student at many American universities, to be a member of any fraternity is better than none—when one is known as a 'barb' or barbarian.

Fraternities have as titles combinations of Greek letters representing Greek mottoes. The earliest, and one of the most famous, is Phi Beta Kappa, founded in 1776 at the College of William and Mary in Virginia, as a student social club with only five members. In 1781, when the college was temporarily closed, a member of the society provided money for meeting-houses to be opened at Yale and Harvard; these 'chapters', as they were called, started three others at the universities of Dartmouth, Union, and Bowdoin. Originally Phi Beta Kappa had been a secret society, strictly limited in its membership; but this secrecy was abandoned in 1826, and members of its local chapters, both men and women, are now elected from the most academically distinguished students of the year. Phi Beta Kappa has developed into some-

thing quite different from other fraternities, since it is now no longer a social club, but a nationally recognized hall-mark of academic distinction, both for the college which has a chapter and the student who is elected.

Other fraternities gradually developed, until there were more than seventy, two of which have chapters in over a hundred colleges. Modern fraternities are still to some extent secret societies. Each has its own private badge, motto, hand-grip, flag, colour, flower, or coat of arms. Active membership of the fraternity ends on leaving college, but former members or 'alumni' play a large part in fraternity affairs; they attend conventions once or twice a year, assemble at 'Commencement' or on other reunion occasions; and generally make it their business to foster a spirit of pride and loyalty among the freshmen. The chapter houses, in which the students live, are usually owned by a corporation of ex-members of the chapter.

The fraternities play a large part in student life and in college politics, though now there is a tendency, especially in the larger eastern universities, to limit their activities. There is keen rivalry between chapters for athletic and scholastic honours; but an Inter-Fraternity Conference, formed in New York in 1909, exerts its influence to promote goodwill and co-operation between them. In imitation of the fraternities there are organizations for women students in co-educational colleges known as 'sororities'; but these societies carry less weight and are less picturesque than the fraternities. Except, of course, for Phi Beta Kappa, the most important women's colleges have not permitted sororities.

See also Vol. X: AMERICAN EDUCATION; SECRET SOCIETIES.

VALENTINES, *see* TRADITIONAL SPORTS AND CUSTOMS.

VARIETY SHOW, *see* MUSIC HALL.

VAUDEVILLE, *see* MUSIC HALL.

VENTRILOQUISM. This literally means 'speaking from the stomach'. It is the art of producing the voice without perceptible movement of the lips (particularly difficult to achieve with the consonants 'm' and 'b'), so that the sound appears to come not from the speaker's mouth but from somewhere else. The ventrilo-

THE AMERICAN VENTRILOQUIST, EDGAR BERGEN, WITH HIS DUMMIES, CHARLIE MCCARTHY AND MORTIMER SNERD
They are taking part in the B.B.C. Broadcast, *In Town To-night. B.B.C.*

quist helps to create this illusion by having a dummy with a moving mouth, who is the apparent speaker. The dummy may be anything from a life-size figure to a face painted round the clenched thumb and finger. In order to concentrate the attention of the audience on the dummy, and especially on its moving mouth, the figure is often exaggerated; a conventional ventriloquist's dummy is a wooden doll with large glassy eyes, enormous shutter mouth, and teeth like tombstones.

The ventriloquist uses a special voice when he is speaking for the dummy, and keeps his own part in the dialogue as colourless and quiet as possible. In this way he builds up a definite character for the dummy, which must be aggressive enough to dominate the partnership. The ventriloquist Coram, in a military coat before a drop-scene of the Horse Guards in Whitehall, often stood abashed before the corrections of his Jerry; and Arthur Prince, as a naval officer, smoked a cigar and drank from a full tumbler, while the dummy sailor on his knee rated him.

When A. C. Astor asked his dummy chauffeur why there had been a complaint from the police, the story, unfolded with repeated protestations of innocence, formed a one-act play.

That the quality of the dialogue, the humour of the situations enacted, and the building-up of the dummy's personality are as important as the ability of the ventriloquist to keep his mouth from moving is proved by the success of ventriloquists on the radio, where, for all the public knows, they might open their mouths as wide as the dummy's shutter.

VERSE SPEAKING, *see* MUSIC AND DRAMA FESTIVALS.

VIOLA, VIOLIN, VIOLONCELLO, *see* STRING INSTRUMENTS.

VIOLS are bowed instruments which were very popular during the 16th and 17th centuries, and were the direct ancestors of the violin family (*see* STRING INSTRUMENTS). Viols were made of many different sizes, the chief members of the family being the treble or descant viol which usually played the highest part, the alto and tenor viols filling the middle register, and the bass viol or viola da gamba which supplied the bass line. Groups or 'consorts' of viols, probably from two to seven instruments, usually performed together. They were often kept in specially made chests which held three or six instruments. The expression, a 'chest of viols' was used for a set of instruments.

Viols differ from members of the violin family in several important ways. They are held between the knees or legs; hence the name viola da gamba or 'leg viol', and viola da braccio or 'arm viol'. The viol bow is convex in shape and held from below, whereas the modern violin bow is concave and held from above. Unlike the violin the viol has a fretted finger-board, sloping side to the neck, and deep ribs. Its 'bridge' is less arched than the violin's. Sometimes it has C instead of F holes. Normally it has six strings, instead of four as in the violin. The viola d'amore or 'love viol' had also a set of sympathetic strings under the finger board, which vibrated in sympathy with the upper strings and gave to the instrument a distinctive quality and tone.
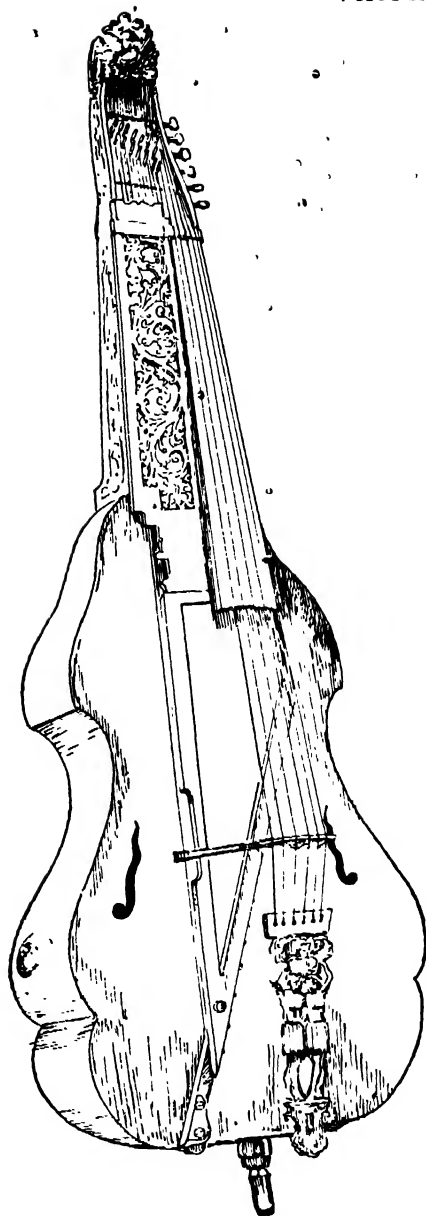
VIOLA DI BORDONE, 1686

Viols fell into complete disuse during the 19th century, but are coming back into popular favour to-day, largely as a result of the enthusiasm of the Dolmetsch family.

See also MUSICAL INSTRUMENTS, HISTORY OF; ORCHESTRA.

VIRGINALS, *see* KEYBOARD INSTRUMENTS.

W · X · Y Z

WAITS AND CAROL SINGERS. The waits were originally the watchmen who guarded the gates of the walled cities and towns of the Middle Ages. One of their duties was the sounding of the hours, which they called by playing a single note, or sometimes a simple tune, on a wind-instrument rather like an oboe. Many of them were proficient musicians, and as time went on, it became customary for the town waits to act as a band which played on official and festive civic occasions. In the early 16th century, London and other chief boroughs had corporation waits who fulfilled this function. Dressed in a livery of blue with red sleeves and cap, and with a silver collar and silver chain of office, they would play before the mayor and corporation in processions, providing music for civic banquets, and welcoming distinguished visitors to the city. Even late in the 18th century the waits still played in this way in the city of Bath. In the 19th century the development of the police force made civic watchmen unnecessary, and the waits in their old form ceased to exist.

Because their duties were largely open-air, the waits used instruments of the reed and brass kind, which were loud and unaffected by the weather; but most of them could play string instruments as well. We know little about the kind of music they played; but there is no doubt that many of them were able performers. In Bach's day, in Leipzig, the town musicians took part in the performance of cantatas and Passions in the big churches, and it was they who played those difficult and exciting trumpet parts in works like the *Christmas Oratorio* and the *B Minor Mass*. BACH (q.v. Vol. V) himself came of a family of which many members had been famous town musicians.

One of the seasonal activities of the waits was the performance of Christmas music in the streets, and this habit of serenading the citizens on Christmas Eve has led to our use of the word 'waits' for any group of carol singers. The performance of Christmas music and carol singing is now a strictly non-professional activity, as it must always have been in country towns and villages. A perfect description of what traditional carol singing and playing were like in the English country village in the 19th century can be found in *Under the Greenwood Tree* by Thomas Hardy. Choirs and bands of carol singers are still sometimes to be heard, but the custom is carried on mainly by small children, who use it as a means of collecting pennies.

See also Vol. XII. CAROLS.

WAKES. When Wakes Week begins in a Lancashire cotton town, the excursion trains and charabancs leave all day, and presently the town looks very deserted. The mill gates are locked, no smoke comes out of the chimneys, and only a few of the shops are open. Somewhere in the centre of the town is the old parish church, once completely dominant, but now dwarfed by the great warehouses and factories. There seems to be no connexion whatever between the church and the holiday. Yet a connexion there is and a very important one—for the parish church is the very origin of Wakes Week.

The word 'wake' literally means a vigil, and 'wakes', once practised among the Celtic tribes in early Britain, are still held in many countries as an important part of their DEATH CEREMONIES (q.v. Vol. I)—the mourners watching and feasting all night by the dead body, singing and dancing to protect the soul from demons on its way to the other world. The 'wakes' of the north of England, however, though they are also connected with an all-night vigil, have a different origin—they date only from Saxon times. The missionaries to Saxon England wanted to replace the heathen festivals with Christian ones; so when a new church was built, it was dedicated to a saint, and that day became a local holiday. But before a feast there must be a fast; and thus each year on the eve of the dedication day there was an all-night vigil in the new building. When the sun rose, the watchers and everyone else in the parish gave themselves over to feasting.

These daylight joys survived the Reformation and even the imprecations of the Puritans. They generally took place on a Sunday; there was dancing, riding, and boxing; beer-drinking matches for the men, tea-drinking for the women;

and until the 18th century there might be BEAR-BAITING (q.v.) or bull-baiting.

These were country festivals; but the Wakes to-day are notably urban. In the worst period of the Industrial Revolution children would work in the mills of the north from five in the morning till eight at night. It need hardly be said that they looked forward to the one proper holiday they would have in the year. Conditions have improved; but Wakes Week has never lost the special glamour it acquired in that degraded period. The Wakes had already stolen the May Queen from May Day, and renamed her the Rose Queen: now, in Lancashire and Cheshire, there is a Cotton, a Silk, and a Dairy Queen, elected from pretty girl workers, whose photographs appear in the papers and are widely voted on. The Queens attend many functions and are said to be good for their trade—one day in overalls at the bench, the next in crown and velvet robes on the civic platform.

And so, at different dates throughout the season, one town after another shuts up shop and gives itself up to all the pleasures of a modern holiday—fun fairs and circuses, fireworks and gymkhanas, ices, donkeys, and switch-back railways: the whole amazing machinery of 20th-century amusement.

See also HOLIDAYS.

WALKING.

In modern times walking for pleasure, often covering long distances, has become a common recreation. In the past, when no other transport existed, walking was to the majority of people too much a necessary part of a working day to be often undertaken for its own sake. Some people, however, walked for pleasure, and even regarded walking as a sport. Thomas Coryate, for example, at the beginning of the 17th century walked from Somerset to Venice and back, and at the end of his journey placed his worn-out shoes on the altar of Odcombe church in Somerset. Later, in 1815, George Wilson at the age of 60 covered 1,000 miles in 20 days.

After the First World War the custom began to develop among townspeople of going out into the country to walk—'hiking' became established as a sport and as a week-end and holiday recreation. Ramblers' Clubs were formed, youth hostels opened, and the weekly walk, complete with sketch map and itinerary, became a feature of many newspapers. Thus a new

Incipit Henricus Peacham.

Memoriæ Sacrum. ·
Seu calcei Laureati THOMÆ CORYATI
Odcombiensis, Peregrinantium noſtri
Seculi facilè Principis.

Ad Thomam noſtrum.

CVr Coryate t hi caleem Phœbea Daphne
Cinxerit, & vnde Laure i mulla come?
Infanos mundi feſſan con temp is honore,
Loribus & Lauro es tunis ab' Æmilia.
Veniis at caput is plena (Coryate) miſeria
In calces imos Muſa reccit onus.

To

THOMAS CORYATE'S SHOES
From *Coryate's Crudities*, 1611

interest in the beauty of the country has been kindled, and societies formed to preserve footpaths and save beauty spots from destruction by careless tourists, as well as from urban and industrial development (see NATIONAL TRUST).

The greatest distance the normal good walker can cover comfortably in a day is about 25 to 30 miles, but on a walking tour a normal average is between 12 and 20 miles a day. Short distances can be covered at 4 m.p.h., but for a longer walk 3 m.p.h. is a good speed. This varies, of course, with the type of country, and is naturally slower on rough or hilly ground. For a day's ramble, sandwiches, a mackintosh, a map, and perhaps a stick are the only essential things to carry; for a tour, a rucksack is needed, containing a change of underclothing, dining and toilet articles, cream for sunburn, and plaster for possible injuries. A compass is often useful, especially for walking on moors and hills; and if the walker wants to watch birds, he should carry binoculars. For mountain tramping it is best to wear boots as they support the ankles; otherwise stout walking-shoes with thick socks

are adequate. Feet soon become tired in thin-soled shoes, and rubber shoes are unsuitable as they slip on grass and make the feet hot. Blisters are the greatest danger to comfortable walking; one good way to prevent them is to soap the feet and socks before starting out.

See also YOUTH HOSTELS.

WALKING RACES. The Amateur Athletic Association rule, which governs walking races among other athletic events, lays it down that: 'Walking is progression by steps so taken that unbroken contact with the ground is maintained'.

One of the most famous walking races is that promoted annually by the London Stock Exchange between London and Brighton. This and other national contests so encouraged speed walkers in Britain that until 1926 Britain held every record from 1 mile in 6 min. 25·8 sec. to 25 miles in 3 hr. 37 min. 6·8 sec. Since then, however, other countries—especially Denmark, Italy, and Sweden—have produced record breakers. In the 1948 Olympic Games the longest walking race of 50,000 metres (about 31 miles) was won by a Swedish walker in 4 hr. 41 min. 52 sec.

Race walking, whether on a track or a high-road, is at top strain the whole way. It requires an action which is far more acquired than natural, and resembles ordinary walking action only in the movements of the hands and feet, and the fact that a part of one foot must be on the ground all the time. The poise of the head and body, the action of the legs, the play of the feet, and the easy swing of the hips are the hall-marks of the good walker. A racing walker 'locks' his knees at the end of each stride, and keeps the leg on the ground stiff and taut as the free leg swings through to the next stride. He can only stride his natural length, even when walking at top speed. The racer, moreover, moves along in what are a series of jerks. As the leg which has its foot on the ground is locked at the knee and taking the whole weight of the

COMPETITORS IN THE 7-MILE WALKING CHAMPIONSHIP AT THE WHITE CITY, LONDON, 1947
Sport and General

body, it is upright and momentarily stationary when the free leg is half way through the next forward stride. Arm propulsion and swaying hips also contribute to the pace. The walker with a good swinging style brings his arms up with a powerful drive across the chest, so that the raised hand almost touches the shoulder on the opposite side of the body, while the other hand is dropped to a point slightly behind the hip. The head and body are held nearly upright, but are poised slightly forward as the stride is being taken. The hips should be moved smoothly forward with very little rolling.

It is the pace and not the distance that causes many racing walkers to fail. A walker who can cover a mile in 7½ mins. should, without difficulty, go double the distance in 15½ mins. When training, the walker aims at achieving pace with a loose, free action, rather than distance. If a race at 1 mile is the objective, it is a good principle to train with fast walks of ½ to 1½ miles. Skipping, dumb-bell exercises (to cultivate the arm action), leg and hip thrusts, and bending-and-stretching exercises are all good practices for the general building-up of a walker.

See also ATHLETICS.

WALL GAME, ETON, *see* ETON FOOTBALL.

WALL OF DEATH. This is a spectacular motor-cycling event seen in the fun fairs and show-grounds of Britain. The actual 'wall' consists of a strongly built, hollow, wooden tower about 20 ft. high and 20 ft. in diameter. The inner side is vertical, except for about 2 ft. 6 in. of wooden 'banking' at an angle of 45 degrees at the base. A railed gallery on the outside, about 4 feet from the top, accommodates the spectators. Inside the pit a motor-cyclist starts up his engine on the centre of the floor, mounts the banking, and gradually accelerates until he is circling the vertical portion of the wall at speeds which may reach 60 miles an hour. Less common stunts include the use of sidecars and even of baby motor-cars, in which passengers are taken. Even a lion has been taken as a passenger. The performance looks extremely dangerous; but in fact centrifugal force holds the riders quite firmly on to their vertical track, and accidents are practically unknown. The chief danger is that the rider, through careless steering, may shoot clean over the top.

See also FAIRS.

THE WALL OF DEATH AT THE KURSAAL, SOUTHEND
Picture Post

WALTZ, *see* BALLROOM-DANCING.

WATER POLO. Like many other sports, this is of British origin. At various times it has been known as 'aquatic football' and 'aquatic handball', and at first it was played under a variety of rules. In 1888 the Amateur Swimming Association took over control of the game, and drafted rules which are the basis for those in use to-day. The first international match was played between England and Scotland in 1890, and resulted in a win for the Scots by 4 goals to nil.

The game is played by two teams, each consisting of seven players, who, as in ASSOCIATION FOOTBALL (q.v.), try to get the ball into the opposing goal. The positions of the teams in the British game are: goalkeeper, two backs, half-back, and three forwards; continental countries usually play with two half-backs and only two forwards.

The maximum length of the pitch is 30 metres, with a minimum of 18½ metres, while the width should not exceed 20 metres. Goal-posts must be 10 feet apart, the height varying according to the depth of the water. Where the water is 5 feet deep or more, the height of the cross-bar is 3 feet above the surface; if it is less than 5 feet, the cross-bar must be 8 feet from the bottom of the bath. The minimum depth of water allowed

is 3 feet, but it is far better that the game should be played in deep water.

At the start of the game the two teams line up level with their goal posts. The referee blows a whistle, and at the same time throws the ball into the centre of the bath. The opposing forwards race for the ball, while the remaining members of the team swim into position to cover them. The forward who obtains the ball passes it back to one of his side, who in turn passes up the field. A goal cannot be scored unless a player of each team has handled the ball, or unless it has been passed back into the attacking team's half of the pitch, and been handled by one other player. Except for the goalkeeper, all players are allowed to use one hand only when playing the ball. When picking it up, the player presses it gently on the water, then with a quick turn of the wrist, balances it in the palm of the hand. There are several types of throw: the straight arm, as when throwing a cricket ball; the bent arm; the round arm sling (this is not recommended, because it is slow and cumbersome and easy to block); and the back-flip, which is used when the player takes the ball in front of him and jerks it to the rear. To throw the ball with any force it is essential to gain height, and balance with the shoulders well clear of the water, and to do this, a quick scissor movement is made with the legs; while the free hand presses on the water.

The goalkeeper has a difficult task, as he has to 'jump from nothing' to reach high shots. A good standard of swimming is required, and it is essential to be able to get waist-high out of the water to cover the goal, which is done by a quick breast-stroke movement. A good goalkeeper should be able to stop the ball on the forearm and pass out accurately to the members of his team. Apart from stopping goals, he can often be the means of making them by clever passing out. He must not throw over the halfway line.

See also SWIMMING.

WATER SKI-ING. This sport started in the early 1930's, when some French ski-troopers tried to use their snow skis on water. It has about 10,000 followers in the U.S.A., but the high cost of the necessary equipment prevents it becoming widely popular. The skis are about 6 feet long by 5 inches wide, and the rider, holding a 60-foot rope, is towed on the surface of the water by a motor-boat at speeds between 30 and 40 miles an hour. The Fourth National Water Ski Tournament was held on Lake Macatawa, Michigan, in August 1946, where, besides reaching high speeds, competitors gave displays of trick riding, taking jumps, riding in pairs, and even being towed backwards on one ski. Ordinary water ski-ing presents no difficulties to the practised snow skier.

See also SURF-RIDING; SKI-ING.

WAXWORKS. Ever since the ancient Egyptians made imitation coloured fruits and carved small figures of their gods to keep them company in their graves, beeswax has been a favourite material for modelling. It cuts and shapes easily, can be melted and poured into moulds, and will

THE HUNGARIAN WATER POLO TEAM PRACTISING IN WEMBLEY POOL FOR THE OLYMPIC GAMES, 1948
Fox Photos

A WAXWORK GROUP OF THE FRENCH ROYAL FAMILY IMPRISONED IN THE TEMPLE DURING THE REVOLUTION
Musée Grévin, Paris

mix with colour. The Greeks used it to make children's dolls, and the Roman nobles preserved wax masks of their ancestors, which were shown on ceremonial occasions and carried in funeral processions. Wax figures of saints, kings, and nobles could be seen in the churches of the Middle Ages; and small wax images were used in WITCHCRAFT (q.v. Vol. I) and as good-luck charms.

The first waxworks show, which took place in Hamburg in 1721, was a sober affair, consisting of models used in teaching anatomy; but it started a vogue in Germany for popular displays of life-size figures, some of them with mechanical movements. In the 19th century all kinds of exhibitions and travelling shows, such as Mrs. Jarley's Waxworks, which Dickens described in *The Old Curiosity Shop*, enjoyed great popularity in England. The most famous of them, Tussaud's, came to London in 1802. Madame Marie Tussaud had made models for her uncle, Dr. J. C. Curtius, whose collection of waxworks was displayed in Paris during the French Revolution: two of the busts were carried in procession by the mob when violence first broke out in 1789. The models, which she brought to London from her *cabinet de cire* in the Palais Royal, were first shown in the Strand; and after a tour of the provinces, the exhibition was established in Baker Street. By the time Mme Tussaud died in 1850, at the age of 90, Tussaud's had become a permanent attraction. The 'Chamber of Horrors'; to which its popularity was largely due, was an idea taken from Dr. Curtius, who, as well as representing revolutionary leaders and well-known victims of the guillotine, had devoted a section to famous criminals. In 1884 Tussaud's moved to a large building in the Marylebone Road, and remained there for 40 years. In 1925 the building and nearly all the original figures were destroyed by fire, and it was not until 1928 that the present reconstructed collection was opened. It seems as popular now as when it was a French novelty in 1780. The guillotine is still there; but nowadays the personalities represented are politicians, film stars, the kings of England, aviators, sportsmen, and, of course, the famous wax policeman who is so realistic that he is always being asked questions.

WHIPSNADE, *see* ZOOLOGICAL GARDENS.

WHIST. In two respects this is the greatest of all CARD GAMES (q.v.): it has held the field as the leading indoor pastime longer than any other card game has done, and it is the most difficult card game to play really well. Earlier forms of the game were known as Triumph (hence the word *trump*), Ruff, and Honours. Triumph was certainly played as early as the reign of Henry VIII and is mentioned by Shakespeare. Whist in its modern form began to take shape in the 17th century. It early became known as a game which must be played in silence. In the 18th century the first authoritative manual on the game was written by Edmund Hoyle. A hundred years later the laws and principles of play were standardized by the celebrated Henry Jones ('Cavendish'), who was for many years virtually dictator of the game in the West End card clubs.

The mechanics of the game are simple. Whist is a partnership game for four players, the partners being seated opposite each other. The

players take it in turn to deal, dealing out face downwards the whole pack, thirteen cards to each player. The last card is turned face upwards, and the suit of this card is the 'trump suit' for the deal. When the cards have been dealt the players take them up and look at them, and the play of the hand begins. The player to the dealer's left leads to the first trick, and after that the winner of each trick leads to the next one. Every player must follow suit if he can; if not, he may trump or discard. The highest card of the suit led wins the trick, or if a trump is played, the highest trump. The side making the majority of tricks scores 1 point for every trick taken above six. The scoring of 5 points makes a game, and the best of three games makes a rubber. There are further minor rules, but these vary in different forms of the game.

In essence, that is all whist is—playing to thirteen tricks in succession (in collaboration with one's partner), with a view to taking as many tricks as possible. However, its simple rules conceal a difficult intellectual pastime. The good player must memorize the cards played, as they are played: moreover, he must endeavour to build up a picture in his mind of what cards are likely to be held by his partner and by each of his adversaries. In so far as the picture which he builds up is correct, he will be able to play his remaining cards to get the best results from the deal. In all forms of BRIDGE (q.v.), one of the four hands, called 'dummy', is laid on the table; so that each player sees twenty-six of the fifty-two cards—his own thirteen and those of dummy—and so has to deduce the place of only the remaining twenty-six. Indeed, a good player of contract bridge will often have a complete count of the hands after three or four tricks have been played. But at whist each player has to try to deduce as the play proceeds how thirty-nine cards are distributed among the other three players at the table. This is the reason why whist, though the scoring is simple, is really a more difficult game to play very well than contract bridge.

Whist reached its heyday early in the 19th century—the days when wealthy landowners and retired 'nabobs' won and lost in the West-End clubs at Whist and other card games fortunes which would now be equivalent to hundreds of thousands of pounds. Charles James Fox, the 18th-century politician, lost at play the equivalent of millions. To play whist well, in

such circumstances, was more than a social asset: it was a financial necessity. In the Victorian age, though high play became unfashionable, the supremacy of whist continued. The game declined in popularity and gave way to bridge only when it became so complicated and scientific that long study was necessary to enable a player to hold his own. 'Cavendish', the protagonist of scientific whist, helped in fact to kill the game: he converted what began as a pastime into a laborious intellectual exercise.

Whist is now popular among a large section of the British public as the occasion for 'whist drives'. There are many variations of the rules of a whist drive. This is a usual form. The players seat themselves at a number of tables. At each table one hand is played. Then the winning lady moves to the next table up and the winning gentleman moves down, while the losers change places at the same table, playing the next hand with different partners. The player to win the greatest number of games or to complete the round of tables first, wins the prize. At whist drives, however, the majority of players have very little appreciation of the complexities and infinite subtlety of the game. For the most part, the players believe that all you have to do is to take a trick when you can and to follow suit.

See also CARD GAMES; PLAYING CARDS.

WHISTLING, see SINGING.

WILD FOWLING, see DUCK SHOOTING.

WINCHESTER COLLEGE FOOTBALL. This game, peculiar to Winchester College, claims descent from 1647, although its present form was evolved in the first half of the 19th century. It resembles RUGBY FOOTBALL (q.v.) in having a scrum ('hot') composed of forwards ('ups'), and 'hot-watchers', who correspond roughly to scrum halves and three-quarters. Passing and dribbling, however, are forbidden and there are limitations to the handling permitted, except to the backs ('kicks'). Teams have varied in size, but nowadays are usually 'fifteens' or 'sixes'. The game is played on a ground 80 yds. long by 25 yds. wide, and across each end of the ground runs a furrow ('worms'). Along each side are ropes, tightly stretched between strong 3-foot posts planted at 10-yard intervals; and a yard outside these are

lines of 8-foot rope, netting (once screens of canvas—hence the present name 'canvas' for the game and ground). The ball used is round, and the object of play is to kick the ball over the opponents' 'worms'. This scores a goal, and counts 3 points if the ball is untouched by a defender; if it is touched or crosses 'worms' between the last post and 'canvas', 1 point is counted for a 'behind', which may be converted into a goal. The game is played in the Michaelmas Term only, three-cornered contests being held between the three divisions of the School: 'College', 'Commoners', and 'Houses'.

WIND INSTRUMENTS, *see* BAGPIPES; BRASS INSTRUMENTS; ORGAN; REED ORGANS; WOODWIND INSTRUMENTS.

WINTER SPORTS, *see* SKI-ING; SKATING; CURLING; TOBOGGANING.

WIRELESS, *see* BROADCASTING; BROADCASTING COMMENTARIES; BROADCASTING PROGRAMMES; TELEVISION.

WOLF CUBS, *see* BOY SCOUTS.

WOMEN'S INSTITUTES. The first Women's Institute in the world was founded in 1897 in Canada, since when the movement has spread into many other countries. During the First World War, Mrs. Alfred Watt, who had come to Britain from Canada in 1913 with experience of the Canadian Women's Institutes, helped to start the Institutes in this country. By the end of 1948 there were 6,992 Institutes in England and Wales with a total membership of 397,129, and the number increases every year.

Women's Institutes are for women living in the country; Townswomen's Guilds are similar organizations for women who live in towns. Institutes are formed in villages where the population does not exceed 4,000. They hold monthly meetings, which follow rules of procedure laid down by their central committee, called the National Federation. The agenda for all meetings conforms to the same plan: minutes, correspondence, county and other business, address or demonstration, social half-hour, tea. Institutes elect their own officers annually by secret ballot, and the work is carried out by an Institute committee, helped by sub-committees. All members are eligible to be elected to these committees. The sub-committees—Music and Drama, Produce, Handicrafts, Library, Tea committee, and others—enable Institute members to develop their talents. For instance, the Handicrafts committee arranges classes and competitions to foster traditional handicrafts, such as quilting, lace-making, patchwork, and basketry, as well as such practical arts as glove-making and household repairs. Handicraft Exhibitions are held every few years in London.

Lectures are on a wide variety of topics. Two subjects are forbidden at Institute meetings—religion and politics, so that no controversial topics may intrude upon the friendly atmosphere. In general, however, it is found that in a successful Institute, women of all classes and all opinions find themselves in an atmosphere of such easy intimacy that they are willing to hear and respect each other's point of view on all questions—a very valuable aspect of institute work.

Institutes have benefited village life in a variety of ways. One successful venture is the development in many country towns of W.I. markets. These are run co-operatively under the guidance of a market controller, and members from different Institutes help in setting up the stall, selling, and packing away. Garden produce, honey, cakes, and preserves, home-made face creams and lotions, eggs, poultry, rabbits—and sometimes puppies—are offered for sale to the public. Prices are regulated according to local current rates, and no market may undercut neighbouring retailers. The produce is brought by market shareholders (shares cost one shilling) who may be Institute members, allotment holders, unemployed men, or others. In this way much surplus garden produce in particular is usefully disposed of.

Preservation Centres are another co-operative venture. In the early days of the Second World War, W.I. members formed parties of volunteers who turned surplus fruit into home-made jam to add to the national store-cupboard. Later, this effort was officially sponsored by the Ministry of Food. An allocation of sugar was provided, and jam-making, bottling, and preserving of all kinds were carried out in the centres, often under trying and difficult conditions, by W.I. members who gave their time and work without payment. Institutes also organized the picking of rose hips and other wild fruit which were made into fruit juice for children.

The annual general meeting is held at the

A DISCUSSION GROUP AT THE WOMEN'S INSTITUTE IN LACOCK, WILTSHIRE. *Crown Copyright reserved*

Albert Hall, two Institutes combining to send one delegate. Here resolutions on every kind of public question are discussed and voted on, and recommendations sent to the appropriate Ministries. The W.I. movement is a valuable source of information about life in the country. During the Second World War the National Federation organized a survey on the results of evacuation as seen by country hostesses in reception areas. Sometimes, at Government request, samples of agricultural family budgets are provided, or information given on social questions affecting country dwellers, for example, the adequacy of land-workers' clothing coupons. In short, Women's Institutes have brought a new spirit of enterprise into village life: they have given busy countrywomen new opportunities of education and relaxation, and have taught them the pleasure of working together for a common end.

WOOD-WIND INSTRUMENTS. The term wood-wind includes all instruments which are made of wood and in which sound is produced by setting air in motion in a tube. They may be played in four different ways—by direct blowing

at the end, as in the flageolet (*see* RECORDERS); by cross-blowing through a hole cut in the side of the pipe, as in the flute and piccolo; by vibrating a single reed, as in the clarinet; or by vibrating a double reed, as in the oboe and bassoon (*see also* REED ORGANS).

In all wood-wind instruments variation in pitch is obtained by 'overblowing' (that is, blowing with such force that a harmonic instead of a fundamental note is produced), and by uncovering holes pierced in the side of the instrument. The position of the holes determines the pitch of the notes. Many different methods of arranging the holes were tried in the past, but the system of Theobold Boehm (1793–1881), a Munich flute player, has been adopted generally with the flute, and to a lesser extent with the oboe, clarinet, and bassoon. Boehm arranged the holes in correct pitch position, where at the same time they could be stopped and unstopped easily by the fingers (*see* MUSICAL INSTRUMENTS).

1. FLUTE FAMILY. There are three members of the flute family in general use to-day: the concert flute, the piccolo, and the fife. The bass flute, which is a fourth lower than the concert flute, is little used, and the flute d'amore,

occasionally found in old scores, is now obsolete. All of them are 'transverse' or side-blown instruments.

The concert flute is about 2 feet long, and when overblown produces the octave. It has a three-octave range, the highest limits being produced by cross-fingering. The tone quality in the lower notes is rather muffled, but it reaches an extraordinary brilliance in the upper register. Tremolos, arpeggios, and runs can be produced with great clarity. The flute has been used regularly in the orchestra since the time of Lully (1632–87). Bach and Handel wrote sonatas for a flute and harpsichord, and Mozart wrote two concertos for it. The flute, unlike the piccolo, is a non-transposing instrument, playing all notes actually as they are written. It has a shrill piercing tone, and is probably the most agile instrument in the whole orchestra. It is particularly effective in short 'flashes', which can be used to emphasize the strong accents. In the normal orchestra there are usually only two flute players to deal with two independent flute parts and one piccolo part.

The piccolo is constructed on similar lines to the concert flute, but as it is only 1 foot in length, its pitch range is an octave higher than the flute. As the piccolo is only occasionally used in an orchestra, the second flautist 'doubles' on the piccolo, and is responsible for both the second flute and the piccolo parts. In the unlikely event of both instruments being required at the same time, he chooses the more important part, which is usually that of the piccolo.

The fife is a small high-pitched instrument, like a piccolo. Originally it was constructed without keys, and was probably introduced into England in the 16th century. It has been particularly used as a military instrument in drum and fife bands (see MILITARY BANDS).

2. OBOE FAMILY. In the 16th century there were six instruments related to the modern oboe. The upper ones were called 'shawms' or 'schalmeys', and the lower ones were called 'pommers' and 'bombards'. In the 17th and 18th centuries hautboys (Fr. haut-bois, meaning high-wood) developed from shawms, and 18th-century bassoons from the pommers. Later the instrument was greatly improved, and the name oboe replaced hautboy. The essential features of the whole family are the double reed and the conical bore of the tube which produces the octave when overblown. There are several other members
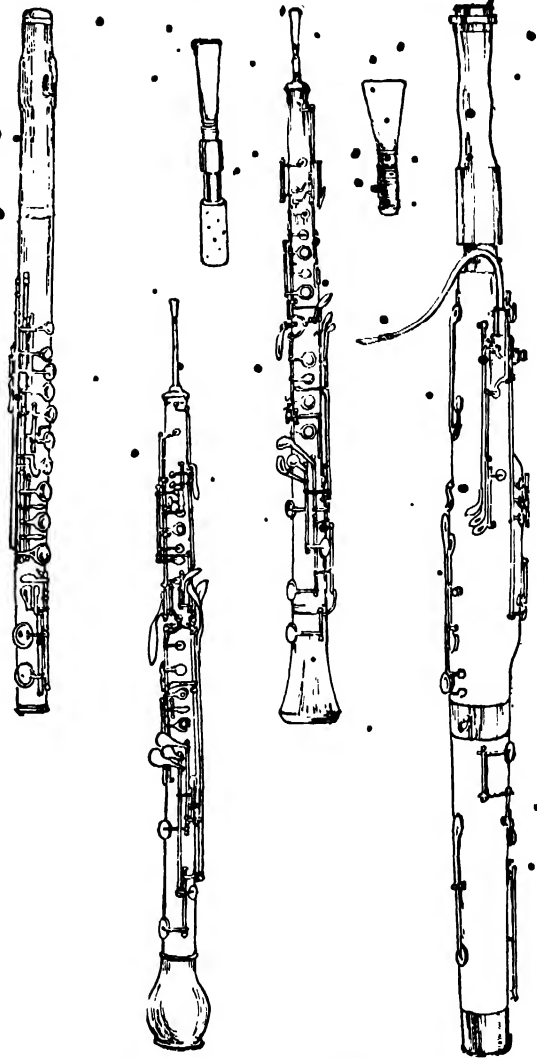
(Left to Right) FLUTE; COR ANGLAIS; OBOE AND MOUTH-PIECE; BASSOON AND MOUTHPIECE

of the family rarely heard to-day. The oboe d'amore was an instrument with a range between those of the oboe and cor anglais, and which now can be regarded as obsolete; the oboe da caccia, that is to say, the hunting oboe, is also obsolete, and any parts written for it are now taken by the cor anglais; the E-flat oboe is occasionally used in military bands; the sarrusophones are a set of military band instruments designed by Sarrus in 1863, which are made of brass, but are constructed like the oboe family.

The oboe is now one of the most fine-toned instruments in the orchestra. In the normal orchestra of to-day two oboes and two bassoons are the usual complement. The second oboe is frequently also called upon to play the cor anglais, which may be regarded as the alto oboe with a range a fifth below that of the oboe itself. The oboe has a somewhat restricted compass of about two-and-a-half octaves, and while it is used regularly to fill in the general ensemble of the orchestra, its chief value lies in the distinctive quality of tone which it imparts to a melody.

The cor anglais is a transposing instrument: the music for it is written a fifth higher than it actually sounds. It can be recognized in the orchestra by the fact that it is longer than the oboe, has a bulbous end, and a curved crook into which the reed is fitted. It is used almost exclusively for melodic work, as in the slow movement of the "New World' Symphony (Dvořák), and in the overture to *William Tell* (Rossini).

CLARINET AND MOUTHPIECE.   SAXOPHONE.

The bassoon is the bass of the whole family and has a curved metal tube or crook which holds the double reed. It has an extensive compass of three-and-a-half octaves, and carries the responsibility of solo work, in addition to supplying the bass and much of the middle register of the wood-wind harmony. It has a dry quality of tone, and has frequently been used for humorous effects, therefore being nicknamed the 'clown of the orchestra'. It is, however, capable of great expressive feeling if properly handled.

The double-bassoon acts in the same way to the wood-wind, as does the double-bass of the string orchestra. It is, however, much less frequently used. Its range is approximately an octave lower than the bassoon. It is a transposing instrument, sounding an octave lower than the music written for it.

3. CLARINET FAMILY. The clarinet was not introduced into the orchestra until the middle of the 18th century. About 1700 Denner of Nuremberg added a 'speaker key' to the old 'chalumeau' (the earliest form of clarinet), and so enabled the upper register of the instrument to be used. The clarinet was considerably improved by Muller in 1810, but the Boehm system of fingering is the one now most generally used. Mozart was one of the earliest composers to write for the instrument, and he included clarinets in his 'Paris' Symphony, written in 1778. The most important members of the family are: the B flat and A clarinet, two of which are usually to be found in the modern orchestra; the bass clarinet, sounding an octave below the Bb or A; the E-flat alto clarinet, which is a military band instrument; the basset-horn or tenor clarinet, which is now obsolete, although Mozart, Beethoven, and Mendelssohn wrote for it.

The clarinet is one of the main instruments in the MILITARY BAND (q.v.), where it takes the place of the orchestral strings. In construction the clarinet is a cylindrical tube having a single beating reed. When overblown it produces the twelfth, and has a range of three-and-a-half octaves. The music for all members of the clarinet family, except the clarinet in C (which is now obsolete), is written as for transposing instruments. Their ability to sustain quiet tone is greater than that of any other wood-wind instrument. They have great expressive capabilities.

4. SAXOPHONE. There are over twelve mem-

bers of the saxophone family. They have reeds, and so belong to the wood-wind family, though they are actually made of brass. Although they have a single reed like the clarinet, they over-blow the octave, and in this respect resemble the piccolo, the flute, the oboe, and the bassoon. They are chiefly used in DANCE BANDS and MILITARY BANDS (qq.v.).

See also MUSICAL INSTRUMENTS.

WRESTLING. Records of this athletic exer-cise go back for many thousands of years. Classic contests are related in Homer and a variety of wrestling attacks and defences are pictured on the Ancient Egyptian monuments. It was a popular event in the old Olympic, Isthmian, and other Greek Games, and to-day it is a regular feature of the modern OLYMPIC GAMES (q.v.).

SCENE IN A GREEK WRESTLING SCHOOL
From a Greek vase, c. 530 B.C. *Berlin Museum*

There are a number of different styles of wrestling—the Catch-as-Catch-Can, the Graeco-Roman, the Cumberland and Westmorland, the Cornish, and All-in wrestling.

1. CATCH-AS-CATCH-CAN. This style is uni-versally popular, and is practised with local variations in Europe, the United States, Canada, South Africa, Australasia, and India. In this type of wrestling a 'fall' is gained by bringing the opponent's two shoulders simultaneously into contact with the mat. The wrestlers start in the upright position, and if both of them come down without a fall being obtained, the struggle continues on the ground until the time limit is reached. Breathing may not be inter-fered with, nor may limbs and fingers be twisted or unnaturally bent or straightened; after two warnings a wrestler may be disqualified for offences of this nature. The time limit is 15 minutes, after which the judges may name the winner according to points gained during the bout.

2. THE GRAECO-ROMAN STYLE, which is similar to Catch-as-Catch-Can, is practised in most European countries. Whereas in Catch-as-Catch-Can any fair hold between the head and the feet, as well as tripping, is permitted, Graeco-Roman wrestlers are limited to holds above the hips, and may not make use of their feet and legs for bringing about a fall. The time limit for a bout is 20 minutes. Graeco-Roman wrest-ling, which is unknown outside Europe, in fact bears little resemblance to the wrestling of the ancient Greeks and Romans.

3. THE CORNISH STYLE of wrestling usually takes place out-of-doors on natural turf. No ground wrestling is permitted, and the object is to throw or 'fell' the opponent by tripping or lifting him. Under Cornish rules a 'fair back' is necessary to win, that is to say, the simultaneous contact of three points of the body with the ground, for example two shoulders and a hip or two hips and a shoulder. The Cornish style is practically the same as that practised in Brittany; during the Middle Ages both Corn-wall and Brittany were reputed to produce the best wrestlers in Europe. The Cornish wrestler wears a jacket on which his opponent must take his initial hold, though afterwards he may change his hold.

4. CUMBERLAND AND WESTMORLAND STYLE is practised, like the Cornish, out-of-doors. A fall occurs when one of the wrestlers is thrown down: 'down' means touching the ground with any part of the body except the feet. Both wrestlers take a preliminary and equal hold before the real struggle begins. Facing one another, each takes a hold round the opponent's body, the right arm passing under the opponent's left, and hands joined by hooking fingers in a firm grip across the opponent's back. A wrestler whose hold is broken is ruled as the loser in the same way as if he had been felled. When both wrestlers fall together so that it is impossible to decide which of them touched the ground first, the bout is wrestled over again. Such a fall is known as a 'dog fall'.

5. ALL-IN WRESTLING includes, as fair holds and moves, most of the dangerous tricks which are debarred from the other styles of wrestling. It has borrowed a number of effective forms of attack and counter-move from the Japanese art of JU-JUTSU (q.v.). All-in contests are not decided

A WELTER-WEIGHT CONTEST OF THE BRITISH AMATEUR WRESTLING CHAMPIONSHIP, DURING THE POLICE SPORTS MEETING AT IMBER COURT, SURREY, 1939. *New York Times*

by falls or by points. As a general rule a bout ends only when the loser is held in such a position that he cannot escape from it, and must yield a 'submission fall', as in ju-jutsu contests. All-in wrestlers are nearly always professionals. In many public contests exciting incidents are sometimes arranged between the two contestants, so that the struggle is not always as severe as it appears to the audience.

See also ATHLETICS.

XYLOPHONE, *see* PERCUSSION INSTRUMENTS.

YACHT RACING: The first recorded race between pleasure yachts in this country is that noted in Pepys's Diary for October 1st, 1661; 'Between Charles II and his brother, the Duke of York, for one hundred guineas, a sailing match from Greenwich to Gravesend and back. The King won.' The craft in which Charles and his brother, and later Sir William Batey and others,

raced regularly on the Thames were modelled on the Dutch pleasure yachts of the day; but little more is known about them, and no record of their lines has been preserved. Many persons of wealth and leisure, between Charles II's time and the early 19th century, built private pleasure boats of every type, all of which were called 'yachts' (after the Dutch sailing-vessels). In 1815 the Royal Yacht Squadron was formed and yacht-racing became a firmly established sport. The early yachts of the Squadron were large, powerful vessels (the Commodore's ship, for example, was a full-rigged ship of 381 tons), and the early racing must have been an impressive sight. In 1823 the Royal Yacht Club was founded and began to organize regular races for a fleet of small vessels of 25 tons (pygmies compared with the giants of the Squadron), but in general, although smaller yachts were built from time to time, the trend of development was towards larger and larger vessels. As the early

yacht builders did not have the technical skill of the modern designer, there was a good deal of chance about the success or failure in speed of a new yacht. It was soon discovered that the greater a vessel's length on the water-line, the faster she went, and so the racing cutters and schooners in the late 19th century tended to become still larger.

After the First World War these huge, fantastically expensive yachts, with their enormous rigs and large crews, gradually disappeared. There was a temporary revival in the 1920's, but comparatively few boats were built. The introduction of the Bermuda rig with its tall mast (*see* SAILING BOATS) made the largest racing class, the 'J' class cutters, even more costly. These boats had an overall length of about 135 feet and a beam of about 20 feet. They displaced about 170 tons, and had a sail area approaching 8,000 sq. ft. The rig rapidly developed into such an absurdity that the boats were not fit to be put to sea in anything more than a fresh breeze, and race after race had to be cancelled because the owners would not risk the loss of their masts. These 'J' class cutters were comparable with the yachts, such as *Endeavour I* and *II*, which raced for the AMERICA's CUP (q.v.), and to many people, despite their beauty when sailing, they seemed the most useless sailing vessels ever devised. They were the greatest imaginable contrast to ships like the King's *Britannia* and the other great cutters of the late 19th and early 20th centuries, which cruised regularly under their ordinary racing rigs from port to port between regattas in all weathers. By contrast, the smaller racing classes, the 12, 8, and 6 metre boats, built to a new international rule, proved remarkably seaworthy.

During the years between the two world wars the smallest racing classes, of which innumerable examples had sprung up all round the coast—the Solent Sunbeams, the X-Boats, the East Coast 'One Designs', and many others —became increasingly popular until in 1939 there were over eighty registered classes racing regularly. One of the most successful of the new classes was the Swedish 'Dragon', which was
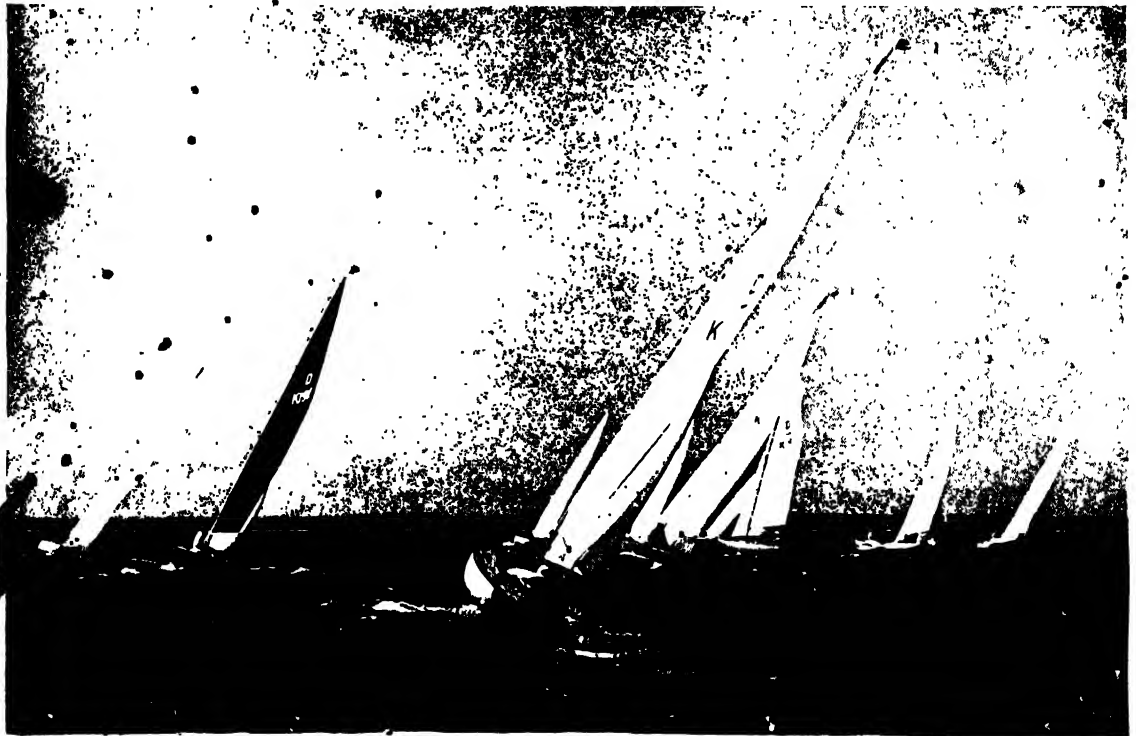
DRAGON CLASS YACHTS RACING AT COWES IN 1949
Second from the left is the yacht Bluebottle, owned by Queen Elizabeth II and the Duke of Edinburgh. *The Times*

first imported on the Clyde and soon became extremely popular. These little craft (18 ft. 7 in. in length) provide tremendous sport, and yet have a cabin which is quite sufficient for two people to live in over a week-end, so that the boats can be sailed from regatta to regatta.

The modern trend in yacht-racing is towards this small, easily-handled, and inexpensive type of craft, which requires no professional crew and has small upkeep costs. It is significant that in the majority of recent designs no crew's quarters are provided at all, and it is also noteworthy that among the new designs approved by the Yacht Racing Association since the Second World War have been those of two dinghies, a 12-footer and a 15-footer (both of them being built on mass-production lines by a former air-craft firm), and a small 18-foot water-line keel yacht.

Yacht-racing in this country has thus come full circle from the professional and almost gladiatorial contests of the early days to keenly fought personal battles between amateurs; and it is most interesting that this should have taken place at a time when so many other sports are becoming the business of professionals. It would seem that yacht-racing offers something which is peculiarly acceptable to the people of this island —excitement and adventure, combined with the free play of individuality and an open-air way of life. There is every possibility of its becoming one of the most popular of our sports.

See also SAILING; AMERICA'S CUP; SAILING REGATTAS.

YELLOWSTONE NATIONAL PARK, see NATIONAL PARKS.

YODELLING, see SINGING.

Y.M.C.A. In 1844 George Williams, a young man of 22, started the Young Men's Christian Association, an interdenominational movement of which the original twelve members were Anglican, Congregationalist, Baptist, and Methodist. Though its aim is to help youth in the development of Christian character, the Y.M.C.A. is a lay body directing its efforts by social and educational activities towards those not normally reached by the Church. Full members must be practising Christians; but there are also Associate members who share all the facilities of their local association but have no control over policy or management. A large degree of

A YOUNG MEMBER OF A NORTH LONDON Y.M.C.A. USING THE CLUB'S CARPENTER'S BENCH AND TOOLS. *Vince*

self-government is maintained in all Y.M.C.A. work: even the youngest members help to run the clubs to which they belong.

There are some 500 local associations in the British Isles with a total membership of about 90,000; nearly half the members are under 20. The local associations have a large measure of autonomy in their own affairs, though they are linked together in Divisional and Regional groups through which they are represented on the National Council. The National Council is directly responsible for such activities as work with the Forces, National Camps and Holiday Centres, Stores' Services, Community Services, and the *British Y.M.C.A. Review.* The Scottish Associations form a separate national movement as do Associations in many other countries. Throughout the world there are in fact some 6,000 Y.M.C.A.s with a total membership of over 2½ millions, federated with the World's Alliance of Y.M.C.A.s which has its headquarters at Geneva.

The majority of Y.M.C.A.s seek to achieve their aim through the provision of club buildings in which, in addition to lounge, reading-room,

library, rooms for lectures and recreation, chapel or 'quiet room', gymnasium, and in the larger centres, restaurant and hostel accommodation, there is organized a four-fold programme of activities—religious, educational, social, and physical. Playing-fields for outdoor games and recreation are connected with most of these club buildings. The Y.M.C.A. has provided a large number of centres for Servicemen both at home and abroad.

See also CLUBS, BOYS' and GIRLS'.

Y.W.C.A. The Young Women's Christian Association was formed in 1877 from two independent movements. In 1855 some of the girls who answered Florence Nightingale's call for nurses to go to the Crimea had to spend a little time in London waiting for sailing orders. Mary Jane Kinnaird, a young married woman, saw these nurses in London searching for somewhere to stay, and so she opened a home for them. Later, as other girls began to leave home for the first time to work in the cities, other homes were opened. The same year, 1855, another young woman, Emma Roberts of Barnet, gathered a group of friends round her to form a circle, both for prayer and for the service of others. Other similar groups sprang up in various parts of the country and became known as 'Institutes'. In 1877 these two movements became united in the Young Women's Christian Association. The Association soon widened its social services to meet new demands. A department was formed for 'securing care for girls on emigration ships'; an employment agency and a traveller's aid department were established, and holiday homes and camps were organized for women workers.

During the First World War forty-three clubs and hostels catered for service women and nursing sisters overseas: during the Second World War Y.W.C.A. service centres stretched from Britain across Europe to the Middle and Far East. At home there were leave hostels, clubs and canteens, and mobile club-vans for service women, Land Army members, and munition workers.

To-day most Y.W.C.A. centres have their own buildings with club rooms, information bureau, and restaurant. Each centre is left free by London Headquarters to decide its own activities, and each has its local Management Committee. Many centres run mixed clubs affiliated to the Y.M.C.A. (q.v.) as well as clubs

for girls and women only. Club programmes vary with the taste and age of members: they may include, in addition to social activities, music, drama, handicrafts, games, international interests, discussion groups, and study circles. Some centres have organized week-end conferences and other educational activities, and all try to stimulate interest in religion through study groups and Christian services. Attendance at such gatherings is voluntary, but all Y.W.C.A. centres are united in the aim: "To take our share in furthering all that strengthens Christian character, and health of body and mind; to encourage understanding and friendship between the peoples of the world.'

The World's Y.W.C.A. was formed in 1894 by Britain, America, Norway, and Sweden; and by 1947 its headquarters at Geneva, served National Associations in seventy countries.

See also CLUBS, BOYS' AND GIRLS'.

YOUTH CENTRES, see CLUBS, BOYS' AND GIRLS'.

YOUTH HOSTELS. The Youth Hostel movement owes its origin largely to a German schoolmaster, Richard Schirrmann. At the end of the 19th century, appalled at the conditions in which town children lived, he decided to give them the benefit of holidays in the country. He used to take them walking, at first using schools for accommodation; but eventually special resting-places were provided, the first being the youth hostel opened at Burg Altena in 1907. The movement grew steadily, and gathered fresh impetus during the economic collapse which followed the First World War, when large numbers of young Germans left the towns and took to a 'ife of roaming the country-side, picking up what casual employment they could, and staying in the youth hostels overnight.

During the 1930's the idea spread to several neighbouring countries: in 1930 the Youth Hostels Association of Great Britain was formed, becoming the Youth Hostels Association (England and Wales), known as the Y.H.A., when the Scottish Youth Hostels Association (the S.Y.H.A.) was formed. Similar organizations were also established in Northern Ireland (Y.H.A.N.I.) and Eire (An Oige).

The object of the Y.H.A. is 'to help all, especially young people of limited means, to a greater knowledge, love, and care of the country-

side, particularly by providing simple accommodation for 'hem in their travels'. Accommodation in the hostels is limited to members who travel on foot, by bicycle, or canoe, and the stay at any one hostel is limited to three consecutive nights. Hostels are closed during the day, no one being admitted between the hours of 10 a.m. and 5 p.m. The hostel buildings vary from cottages and converted farm buildings to historic mansions and castles; some have been specially built. They are carefully sited in or near good walking country. Some are placed in much-frequented beauty spots, such as the converted Park Hotel at Keswick or the mansion on the shores of Ullswater. Others are in very remote spots and are of Spartan simplicity, such as Black Sail Hut in Ennerdale. All hostels provide simple sleeping accommodation, cooking and washing facilities, and a common room. Beds and bedding are provided, but members must carry their own sheet sleeping-bags. The hostels are supervised by wardens who will usually provide meals for members not wishing to cook their own and provide them with a packed meal. Members share domestic duties, which helps to keep down expenses. The overnight fee is 1s. 6d. (9d. for members under 16).

The annual membership fees of the English Association range from 2s. to 10s. according to age, and some form of membership is open to all over 5 years of age. There are nearly 300 hostels in England and Wales, 80 in Scotland, and nearly 50 in Ireland. The combined membership is over a quarter of a million. Youth Hostels Associations now exist in some twenty-five countries, linked together by the International Youth Hostel Federation. A membership card issued by one association is recognized by all associations in the Federation, so that any member of the Youth Hostels Associations in Britain, for example, may also use the Continental and American hostels. Youth hostels, therefore, help to promote international understanding by enabling young people to explore not only their own country-side with a minimum of expense, but also that of other nations.

See also WALKING; CYCLING.

ZOOLOGICAL GARDENS.

A zoo is a place where wild animals are kept in captivity both for the purpose of scientific study of zoology, and for the education and entertainment of the general public. The animals must be kept in such a way that they maintain good health, which means that steps must be taken to provide for them a temperature, diet, and environment suitable for their physical needs. A zoo has animals of all kinds—mammals ranging in size from elephants to harvest-mice; birds from ostriches to humming-birds; and reptiles from crocodiles to tiny wall lizards. Many zoos also include an AQUARIUM (q.v.) where fishes and other water animals can be seen.

Zoos have existed from very early times. About 1680 B.C., a zoo in Egypt is described as having a full complement of monkeys, which were apparently already tame, for they ran loose on the ship that brought them down the Nile. The biggest ancient collection of which there is any record occupied part of the grounds of the world-famous Alexandria Museum, founded by one of the kings of Egypt in the 3rd century B.C. In England the first zoological garden was established by Henry I at Woodstock, Oxfordshire. It contained foreign wild deer, lions, lynxes, a cheetah, a camel, ostriches, and even a porcupine. This collection was moved to the Tower of London during the reign of Henry III, and remained there until 1828, when the London Zoological Society founded the Zoo in Regent's Park. The Jardin des Plantes, the great zoological collection at Paris, was begun in 1793 by Geoffroy Saint-Hilaire.

Zoological gardens are now to be found in most capitals of the world and in many of the larger towns; they are popular attractions for people of all ages. The Zoo in Regent's Park, for example, attracts each year more visitors than all the museums in London together, and

THE GOAT HOUSE AT REGENT'S PARK ZOO
From an engraving of about 1840

THE POLAR BEAR PIT AT WHIPSNADE

The polar bear borrowed the photographer's walking-stick, and after playing with it for a time, he brought it back to the railings and returned it to the photographer. *Edgar Dale*

in 1946 had a record attendance of nearly 2¾ millions.

The favourite animals in most zoos are the large carnivora, such as lions, tigers, and leopards. Sea-lions are popular, as are also the large apes—the chimpanzees and orang-utans. Among other favourites are the monkeys, elephants, giraffes, rhinos and hippos, and zebras. The parrot-house and the aquarium are always great attractions and, rather unexpectedly, so is the reptile-house. The most popular animal shown at the London Zoo in recent times has been the giant panda, Ming, whose grotesque markings and amusing antics made her attractive to watch. Elephants, camels, llamas, and others help to earn their keep by giving rides to the children visitors.

Many of the animals in zoos are now born in captivity, indeed, the great majority of lions, tigers, bears, zebras, and many species of deer have been bred in zoological institutions. Some animals, such as the Père David Deer, have been preserved from becoming extinct by being bred in captivity. A certain number of Zoo inmates have been the pets of private individuals who are no longer able to keep them; but the great majority are obtained through the agency of collectors. It is desirable to capture the animals as young as possible, and to keep them in their native locality until they have become accustomed to human beings and to such food as it is possible to provide for them in captivity. Then they are more likely to stand the journey and the change of environment without too much distress. Young animals that have been partly tamed by hunters, farmers, or natives, and eventually find their way either to establishments that trade in wild animals, or to professional collectors, are most likely to settle well in a zoological garden.

The problem of feeding animals in a zoo and keeping them healthy sometimes presents great difficulty. In England the majority of carnivora (flesh-eaters) are fed on horse-flesh; fish-eating animals and birds are fed mainly on herrings and whiting; ungulates (hoofed animals) on hay and clover, cereals, and vegetables. Every day a full-grown lion will eat 12 lb. of meat (including bones); a sea-lion will eat 20–40 lb. of fish; a penguin 6 lb. of fish; an elephant 1¼ trusses of hay and 6 bundles of green fodder as well as crushed oats, potatoes, carrots, and apples. Such

THE LION ENCLOSURE AT WHIPSNADE. *Edgar Dale*

animals as moles and shrews feed mainly on earthworms, and consume as much as their own weight every 24 hours. The feeding of insectivorous birds and reptiles is very difficult, as it involves the provision of sufficient quantities of insect food or suitable substitutes; also, some of the smaller birds require to be fed every 2 or 3 hours. Before the Second World War the London Zoo used, in an average year, 4 cwt. of ants' eggs, 6¼ cwt. of mealworms, a similar quantity of dried flies, as well as 28,600 eggs. Monkeys eat a mixed diet, including fruit, vegetables, nuts, bread, and potatoes. Some animals can live only on a very specialized diet: the great ant-eater, for example, gets daily about 1¼ pints of a special mixture of finely minced raw meat, raw eggs, condensed milk, and ants' eggs. An extreme case of an animal requiring a specialized diet is that of the Australian koala, for which particular kinds of eucalyptus leaves have to be provided.

The object in any modern zoo is not only to keep the animals healthy and happy, but also to exhibit them in the best manner. The way in which the animals are displayed depends to some extent on their habits and the conditions under which they would live in their natural state. The majority of tropical mammals and birds, fortunately, can become acclimatized to a much lower temperature than that to which they are accustomed in their natural surroundings. The most satisfactory arrangement for most animals is to be provided with houses and indoor cages in which they can be kept warm and dry, communicating with outside cages exposed to sunlight and fresh air. In addition, during the winter, it is desirable for at least some of the houses to be provided with artificial sunlight as well as with the proper degrees of heat and moisture. There is a widespread impression that wild animals do better in large enclosures than in more restricted cages; but the experience of most keepers does not support this belief. On the contrary, many mammals and the great majority of birds remain in better health and live longer when kept in relatively small enclosures.

During this century there have been various developments in the display of animals, including the establishing of zoological parks. The most famous of these was established by Carl Hagenbeck at Hamburg, where many of the animals were displayed in natural surroundings without any intervening bars or fences, the animals being confined by ditches and similar inconspicuous devices. A more natural park of this nature is at Whipsnade, where the animals, many of them herbivora (grass-eaters), live in large paddocks, and animals such as wallabies roam freely within the grounds.

The natural wild life of the various animals mentioned in this article is described in separate articles in Volume II.

See also NATIONAL PARKS; PETS; PERFORMING ANIMALS.